REPORT RESUMES

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CHILDREN'S ATTITUDES TOWARD SCHOOL AND THEIR RELATIONSHIPS WITH SCHOOL ANXIETY, STUDY I. SCHOOL ANXIETY AND CONGITIVE FUNCTIONING--EXPLORATORY STUDIES.

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GROUP DIFFERENCES (AGE, SEX, AND SOCIAL CLASS) IN CHILDREN'S SCHOOL ANXIETY AND IN THEIR ATTITUDES TOWARD VARIOUS ASPECTS OF SCHOOL, AND THE RELATIONSHIPS BETWEEN ANXIETY AND CHILDREN'S ATTITUDE PATTERNS WERE EXPLORED. SEVERAL THEORIES AND EARLIER STUDIES IN THIS AREA ARE DISCUSSED. THE SAMPLE CONSISTED OF 480 STUDENTS IN GRADES FIVE, SEVEN, AND NINE, ACROSS TWO DIFFERENT SOCIOECONOMIC LEVELS. BASIC STATISTICAL ANALYSIS CALLED FOR AN AGE X SEX X SOCIAL CLASS PARADIGM WHICH RESULTED IN A 12-CELL DESIGN. INSTRUMENTS USED WERE THE MULTI-DIMENSIONAL PAPER AND PENCIL QUESTIONNAIRE INVENTORIES. CORRELATION AND MULTI-VARIANT ANALYSIS PROCEDURES WERE USED, AND THE RESULTS SUMMARIZED IN TABLES. IT WAS FOUND THAT--(1) CHILDREN INCREASINGLY DISLIKE BOTH THE ACADEMIC AND SOCIAL ASPECTS OF SCHOOL AS THEY GROW OLDER, (2) ELEMENTARY SCHOOL GIRLS LIKE THE ACADEMIC ASPECTS MORE THAN BOYS, (3) LOWER CLASS ADOLESCENTS LIKE AND VALUE THE ACADEMIC ASPECTS OF SCHOOL MORE AND VALUE SOCIAL CONTACTS MORE THAN UPPER CLASS CHILDREN, AND (4) LOWER CLASS CHILDREN MANIFEST A HIGHER DEGREE OF TEST ANXIETY, ESPECIALLY IN ELEMENTARY SCHOOL. STUDENT CHARACTERISTICS, RESEARCH RESULTS, AND INSTRUMENTATION ARE APPENDED. THIS DOCUMENT APPEARED AS STUDY 1 IN SCHOOL ANXIETY AND COGNITIVE FUNCTIONING, EXPLORATORY STUDIES, REPORT 4, IRCOPPS MIDWEST RESEARCH CENTER FOR PUPIL PERSONNEL SERVICES, ANN ARBOR, MICH., PP. 1-101. (PS)

REPORT 4

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MIDWEST RESEARCH
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SCHOOL ANXIETY AND COGNITIVE FUNCTIONING: EXPLORATORY STUDIES

CG 000 925

Report 4

IRCOPPS MIDWEST RESEARCH CENTER
FOR PUPIL PERSONNEL SERVICES

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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SCHOOL ANXIETY AND COGNITIVE FUNCTIONING: EXPLORATORY STUDIES

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PREFACE

This report is the fourth in a series of research monographs published by the IRCOPPS Midwest Research Center. A survey of Center activities plus a comprehensive synopsis of the Center's project reports may be found in the Center's 1967 Summary Status Report.

The present monograph reports the results of eight modular pilot studies conducted by various center staff. All research was supported by NIMH Grant #01428. Several of the studies have been presented, in abbreviated form, at various professional meetings and certain of the results have already appeared, or are due to appear, as short published articles.

Appreciation is expressed to the various staff associated with the production of these reports.

James Dunn
James A. Dunn
Director
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TABLE OF CONTENTS

STUDY I CHILDREN'S ATTITUDES TOWARD SCHOOL AND THEIR RELATIONSHIPS WITH SCHOOL ANXIETY, By James A. Dunn and Patricia F. Shanks 1 925

STUDY II A NEW LOOK AT THE EFFECTS OF ANXIETY AND STRESS ON THE PERFORMANCE OF COMPLEX INTELLECTUAL TASKS, By James A. Dunn 102 926

STUDY III THE PREDICTION OF CREATIVITY AND ACADEMIC ACHIEVEMENT FROM A CONCRETE PERCEPTUAL-COGNITIVE TASK, By Philip L. Safford 122 927

STUDY IV AGE, SEX, AND IQ DIFFERENCES IN PERFORMANCE ON A CONCRETE PERCEPTUAL-COGNITIVE TASK, By Philip L. Safford and James A. Dunn 131 928

STUDY V DECREMENT IN CHILDREN'S COGNITIVE PERFORMANCE AS A CONSEQUENCE OF INFORMATION OVERLOAD, By Roger O. Scott 141 929

STUDY VI SCHOOL AND FAMILY BACKGROUND CORRELATES OF CHILDREN'S SCHOOL ANXIETY, By James A. Dunn 165 930

STUDY VII THE RELIABILITY AND VALIDITY OF THE NEW HARRIS-GOODENOUGH DRAW-A-MAN TEST, By James A. Dunn 212 931

STUDY VIII SCHOOL ANXIETY AND THE FACILITATION OF PERFORMANCE, By Ruth F. Schelkun and James A. Dunn 223 932

STUDY I

CHILDREN'S ATTITUDES TOWARD SCHOOL AND THEIR RELATIONSHIPS WITH SCHOOL ANXIETY

JAMES A. DUNN
PATRICIA F. SHANKS

TABLE OF CONTENTS

Problem 2

Theory and Hypothesis 3

Literature 15

Method 25

Results 36

Discussion 54

References 58

Appendix A - Data Analysis Tables 61

Appendix B - Extended TASC Analyses 87

Appendix C - Instrumentation 92

Due to an increasing concern for the improvements of children's academic achievement, considerable research in the past decade has been devoted to an effort toward a better understanding of the factors affecting human learning. Most of the recent studies have concentrated on the effects of educational stimulus packaging (i.e., programmed texts, educational TV, computer-based instructional programs, team teaching, and the like); much less attention has been directed toward investigating the effects of emotional factors on intellectual performance.

Complex human learning is presumed to be a function not only of the instructional stimuli impinging on the learner, but also of his affective state at the time of that impingement; consequently, some understanding of the affective state of the child is also necessary if one is to maximize academic gain.

PROBLEM

The present research is divided into two parts: (1) a study of group differences in children's school anxiety and in their attitudes toward various aspects of school, and (2) a study of the relationships between school anxiety and children's attitude patterns.

Attitude studies have generally sought to relate children's attitudes with subject matter preference, group acceptance, emotional adjustment, and academic achievement. School anxiety studies have typically been directed toward the investigation of relationships between anxiety measures and performance indicators such as grade point average, academic achievement, or intelligence test scores. Surprisingly few studies have been reported which have investigated the relationships between school anxiety and attitudes toward school.

The present study undertook: first, a study of age, sex, and social class differences in children's school anxiety, and in their attitudes toward various aspects of school; and second, an exploration of the relationship of differentially patterned school attitudes and children's school anxiety.[1]

THEORY AND HYPOTHESIS

The assumption underlying the first part of the present effort was that there would be developmental and social class differences in school anxiety and attitude patterns. The assumption underlying the second study was that there would be relationships between the degree to which a child was anxious about school and the degree to which he liked, or disliked, valued or devalued the academic and social aspects of school.

Group Difference Theory

Age Differences. The adolescent in our society is usually described as achieving a reasonable measure of social emancipation prior to achieving economic independence. Such social emancipation is presumably not without its price. Adolescence is thought to be a time of marked personality upheaval and identity crisis. As a result the adolescent is described as an individual who needs a variety of models against which he may analyze and evaluate his own personal identity image.

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[1] Subsequent studies deal with the effects of school anxiety and socio-emotional adjustment on academic achievement.

The adolescent is also presumably under greater educational pressure than the pre-adolescent because of the role of education in achieving economic independence, and because of the typical school system's escalation, with age, of emphasis on competition and excellence in academic pursuits. Consequently one could expect that an adolescent would place a greater value on the academic aspects of school than would a younger child. Because of the increasing stress associated with school, however, and hence because of a presumably increasing encounter with negative evaluations of his work, the adolescent could be expected to be less positively disposed toward (i.e., have less positive affect for) the academic aspects of school. In addition, because of the relatively greater value placed on academic activities by adolescents, that is because of the greater perceived saliency of academic achievement for economic independence, anxiety associated with doing well in school could also be expected to be greater for adolescents than for pre-adolescents.

The adolescent has much greater social independence than the pre-adolescent. It may be reasonably assumed that the adolescent would engage in a higher proportion of social contacts, and enjoy them more, in pre-adolescence. The social aspects of school, however, would probably be perceived as less valuable than the academic aspect.

Sex Differences. Regarding sex differences, girls in our society typically have less social freedom and less need for vocational skill. The social role imposed upon females in our society emphasizes vocational competency for males and social competency for females. Girls, because of their faster rate of maturation, generally have a greater degree of academic success in the early school years. Consequently, it would be reasonable to expect elementary school girls, more than elementary school boys, to like the academic aspects of school. At adolescence, because of the more limited social freedom of girls, girls could be expected to both value and like the social aspects of school more than boys do.

Cultural stereotyping of the female sex role has an additional implication, the acceptability--even the expectation--of female dependence and weakness. Girls, therefore, could be expected to be much less reticent in admitting school anxiety.

Social Class Differences. Because of the growing awareness of the crucial role of education in upward mobility, it can be expected that lower socio-economic class children would report a greater value for the academic aspects of school. But, because of their more frequent encounters with school failure, especially in the early years, it could be expected that they would like the academic aspects of school much less than middle class children do.

Also, because of lack of parental supervision, and the congested condition in which lower socio-economic children are required to live, such children typically have much greater social freedom than middle-class children, both in regard to number of contacts and variety of contacts. Consequently, it may be expected that lower-class children would neither value nor like the relatively rigid middle-class supervised social aspects of school.

To summarize then, the hypothesis regarding group differences may be categorized as follows:

Age Hypotheses:

1. Older students would have a higher degree of school anxiety than younger children.
2. Older children would have higher value for academic aspects of school than younger children.
3. Older children would have lower value for social contacts in school than younger children.
4. Older children would like the social contacts of school more than younger children.
5. Older children would like the academic aspects of school less than younger children.

Sex Hypotheses:

6. Girls would express higher school anxiety than boys.
7. Girls would value academics less than boys.
8. Girls would value social contacts more than boys.
9. Girls would like the social contacts of school more than boys.

10. Girls would like the academic aspects of school more than boys.

Social Class Hypotheses

11. Lower-class children will be more anxious regarding school than middle-class children.
12. Lower-class children will value academics more than middle-class children.
13. Lower-class children will value the social aspects of school less than middle-class children.
14. Lower-class children will like the social aspects of school less than middle-class children.
15. Lower-class children will like the academic aspects of school less than middle-class children.

Anxiety Dynamics Theory

The latter problem regarding relationships between attitudes toward school and school anxiety is somewhat more involved than the former (of group differences in children's school anxiety). In the former, hypotheses were derived from relatively accepted developmental and social psychological conceptualizations. In the latter, the considerations underlying the hypotheses are much more tenuous, and much less work has been done in the area. Therefore, much less confidence can be allocated to the relational hypotheses. Their potential value for the generation of further research, i.e., their heuristic value, is much greater, however.

Attitude Dimensions. As indicated earlier, the second phase of the present research effort was based on the assumption that attitudes toward school and school adjustment (i.e., school anxiety) are related. Attitudes toward school can be considered in terms of two basic, and fundamentally different, attitude dimensionalities. The first is the like-dislike dimension, or the affective dimension. The second is the importance-unimportance, or perceived value dimension. A positive orientation on both of these dimensions would seem to be of crucial importance for sustained performance at high-quality levels. The pupil who both likes to study academic subjects and who considers the study of academic subjects important would have a more positive attitude structure toward learning and would, presumably, show less anxiety and higher performance than a peer who, for example, valued academic achievement, but was negatively attracted (i.e., repelled) by the character of the work involved.

An Approach-Avoidance Paradigm. The study of such attitudes is generally subsumed under the broader rhuberic of motivation. The approach-avoidance paradigm can easily be seen. A child who both likes academic enterprises and considers them important is a child in the "double approach" situation. On the other hand, a child who either likes academics but considers them unimportant, or conversely, considers academics important but dislikes them, is in an "approach-avoidance" situation. The child who neither likes nor considers academics important would be in a "double avoidance" situation.

A study of the role of motivation in the learning process has had a long and varied history, and its importance in theory varies with the theorists. However, the general model of learning assumed by most theorists is the behavioral, where drive or motivation is the theoretical construct developed to relate need to response (need - drive - response). In the study of learning, motivation has typically been conceived as a bi-dimensional construct varying only in intensity and directionality.

Motivation research eventually had to deal with what appeared to be multi-directional, or multi-valent, considerations, as in the approach-avoidance work of Miller and Dollard. Their work bares a remarkable resemblance to the clinical concept of ambivalence.

It was never made very explicit, however, how an object could have two simultaneous valence states. This problem was resolved by positioning either an alternating valence condition in which a sort of oscillation took place due to the changing need structure of the organism, or by the juxtaposition of objects having different valences, as when food is placed on a shock grid. Such maneuvers allowed for behavior reversals and for indecision. Thus, the bi-dimensional concept of motivation was allowed to remain basically unchanged.

Motivation in humans, however, may not be uni-directional at all. Indeed, human motivation, as far as school learning is concerned, may be a multi-dimensional construct involving a whole hierarchy of valence states for any given object. Regarding human learning, at least two attitudes may operate to motivate learning behavior: 1) affect for the material being learned; and 2) the perceived value of the material to be learned.

A person's affect for something--how much he likes it--is probably a response related to the degree of pleasure he has experienced from it. Hedonism is the principle on which this response is predicated. Thus, it is not difficult to conceptualize this aspect of motivation as a rather primitive attitude existing at an emotional, or to use a Freudian term, the Id level. The term Id-level can be used, then, to describe the motivational attitude characterized by an emotional affect state presumably predicated on the pleasure principle. (The Freudian concept of the unconscious need not be considered necessary).

Unlike the affect attitude, which is presumably a function of the object's potential quality for immediate pleasure (Ipp), value is the result of an object's deferred gratification potential, i.e., its potential for procuring even greater pleasure at a later time (Dpp).

To pursue the Freudian concept, the deferral of pleasure involves valid reality testing. Thus, value may be assumed to be attributed to an object by means of ego mediation. Thus, we may consider the value or importance a person places on an object to be the result of ego function; hence this motivational attitude may be considered to exist at a level different from the affect level.

To summarize, then, motivation may be considered in terms of "psychic" stratification. Stratification, then, would allow an object to have simultaneous multiple valence.

Such a concept is not as radical as it may at first appear. One of the few areas of general agreement among students of human learning is that human motivation is probably quite complex. Such terms as primary and secondary drives, basic and acquired needs, motive and incentive, need and desire, impulse strength and ego strength, activity interest and goal interest, intrinsic reward and extrinsic reward, have seen common usage and all refer, more or less directly, to the concept of motivational plurality.

Stratification Model. With such a coneptualization of motivation as we now have we may schematize the basic motivation matrix as follows: (Refer to Figure 1, Page 12). The object has two potentials for gratification; an immediate pleasure potential and a deferred pleasure potential. The person is simultaneously attracted or repelled[1] by these characteristics. Thus, a dynamic motivational structure is generated. It is this structure (along with all of the other secondary structures imposed upon this basic matrix) that initiate and direct behavior.

With such a schematic, the four basic attitudinal structures may be expressed as follows: (Refer to Figure 2, Page 12).

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[1] Conceivably, potential for gratification is attractive, no potential is neutral, and negative potential for gratification (i.e., for non-pleasure or pain) is repellent.

FIGURE 1

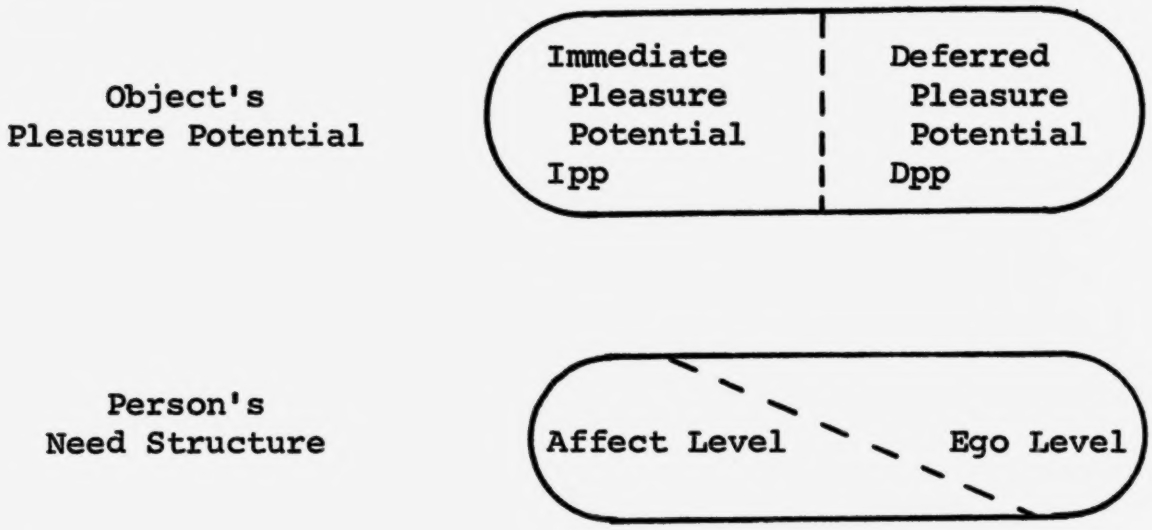
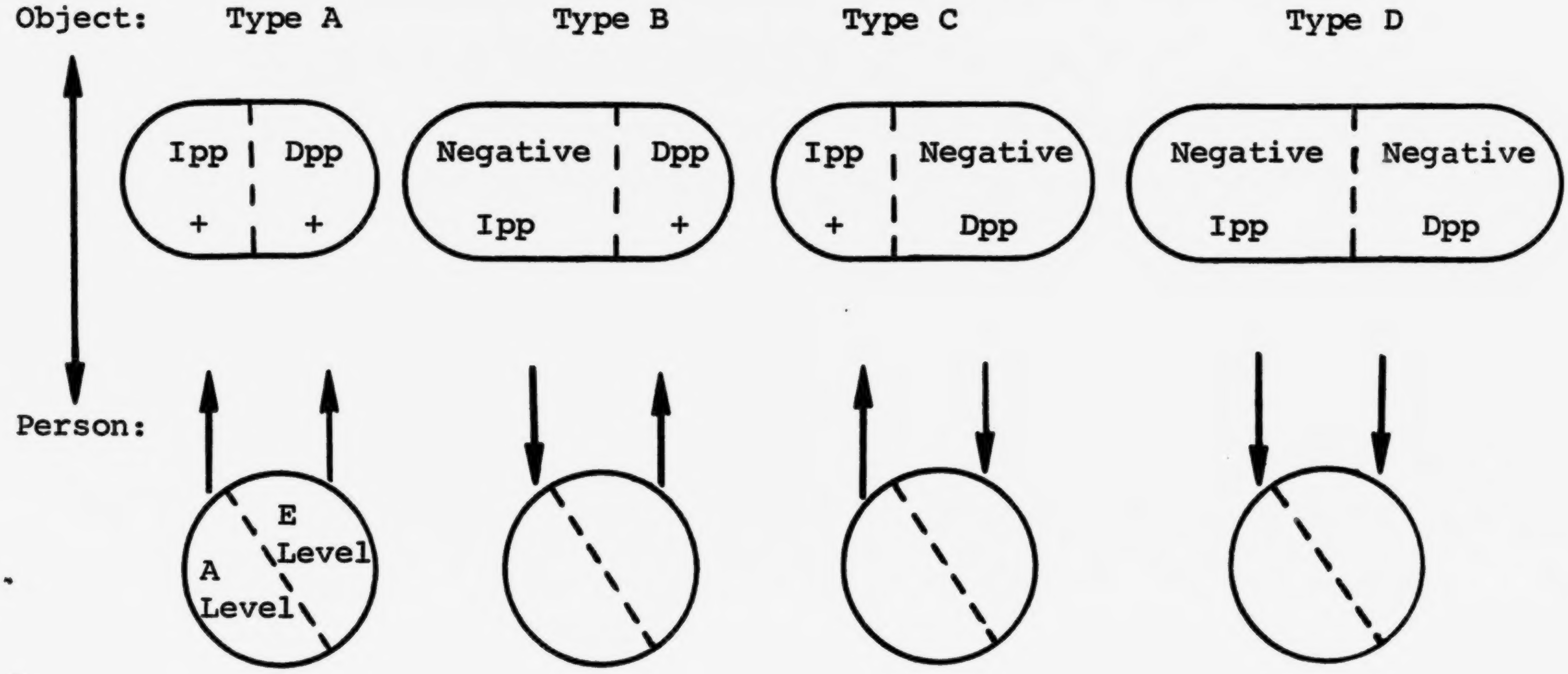

Object's
Pleasure Potential
Immediate
Pleasure
Potential
Ipp
Deferred
Pleasure
Potential
Dpp
Person's
Need Structure
Affect Level
Ego Level

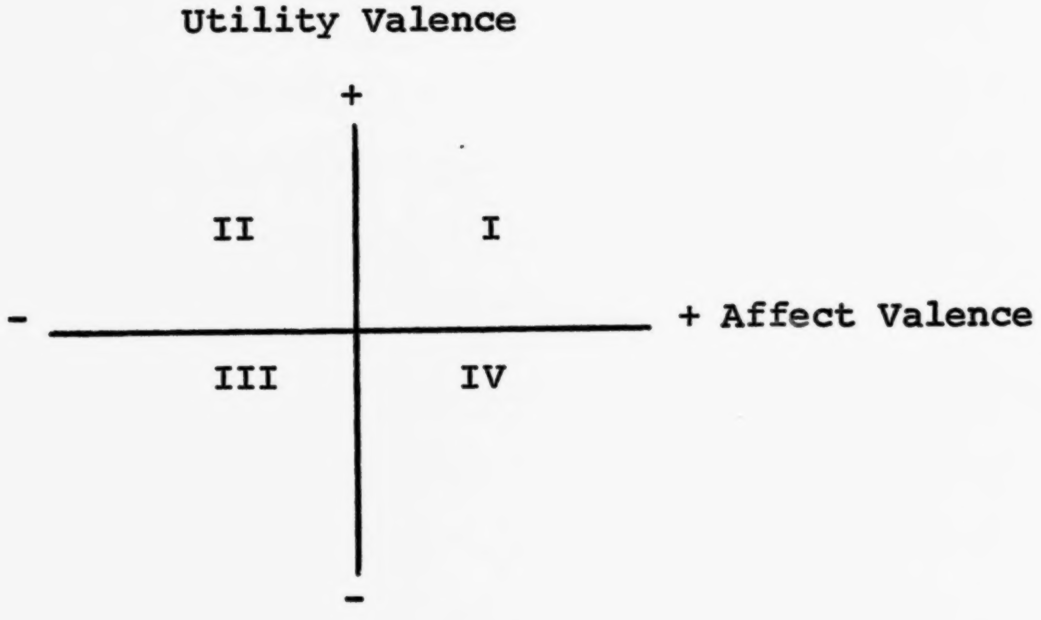
FIGURE 2


Object:
Type A
Type B
Type C
Type D
Ipp
Dpp
+
+
Negative
Ipp
Dpp
+
Ipp
+
Negative
Dpp
Negative
Ipp
Negative
Dpp
Person:
E
Level
A
Level

Operational Mapping. The stratification approach-avoidance model may be mapped into the empirical domain by asking the pupils to rate how much they like certain aspects of school and how important they consider these aspects. While such ratings might not be completely independent of each other, they would presumably be sufficiently different to allow differential attitudinal patterns to be discerned.

Such patterns, if they emerge, could be represented by quadrant plotting on a set of x-y axes, where x is affect valence and y is utility (importance) valence. In this manner people may be described according to the quadrant in which they fall.

Figure 3



Type A - Quadrant I : like school and consider it important.
Type B - Quadrant II : dislike school and consider it important.
Type C - Quadrant III: neither like school nor consider it important.
Type D - Quadrant IV : like school, but do not consider it important.

Pupils in Quadrants I and III (Types A and C) show low discrepancy between their affect valence and value valence; thus we may infer a certain measure of internal harmony, i.e., low anxiety, regarding school. Quadrant I people, however, may also be expected to have higher academic achievement and school attendance, to be perceived by the teacher to be better workers and more cooperative than children of any other group. Quadrant III children would be lowest on these dimensions.

Pupils in Quadrants II and IV (Types B and D) show a high degree of attitude discrepancy; thus we may infer dissonance in their attitudinal structure. In addition, unlike the members of Groups I and III, there is a qualitative as well as quantitative difference. Pupils of Quadrant II, for example, who consider school important, but don't like it, must experience some measure of pain as they endure school. They are in a conflict position similar to the rat who must feed standing on a shock grid.

Inasmuch as the Id level valence is the avoidance valence, this situation will be most painful as society and ego coerce the child into an unpleasant situation.

We should expect such children to express the greatest school anxiety of any of the groups. They would also be expected to express:

a) Negative orientation to school;

b) A negative attitude toward teachers;

c) Poor academic performance; and,

d) Higher absenteeism than Group A.

Quadrant IV pupils, on the other hand, are those who like school, but consider it unimportant. If one's self-concept is the result of his awareness of his personal worth, then he may be typified as low in self-concept because he sees little merit or value in the things which he prefers to do. In other words, the things he likes are not seen as important.

Inasmuch as people do not perceive school as important, they would have reasonably low school anxiety, but because of the positive affect for school, would be positive-oriented toward school, relatively good in academic achievement and low in absenteeism.

Inasmuch as "school" may be considered in terms of its social aspects, as well as its academic aspects, the present model could also be used to generate similar hypotheses regarding the social contacts inherent in the schools. Such effort is beyond the scope of the present study, however.

LITERATURE

A survey of the literature regarding anxiety and attitudes toward school has been particularly fruitful in connection with the first part of the present study. A reasonably adequate body of literature deals with children's attitudes toward school. The results vary enough, however, to suggest that conclusions be approached with caution. Certain social class findings, in particular, challenge common stereotyped beliefs.

As was indicated earlier, there have been very few attempts to integrate, or inter-relate, school anxiety and attitudes toward school.

The literature survey to be presented focuses first on attitude studies and then on anxiety studies.

Attitude Studies

There is a long history of educational concern for the role of interest and attitude in the learning process. One can find throughout the history of educational concern the belief that interest in, and a positive attitude toward, school are primal conditions for effective learning: this conviction can be traced, in one form or another, from Erasmus through Rousseau, Herbart, and Pestalozzi, to John Dewey, who made interest a foundational element in his theory of education. According to Dewey (1913), "Interest marks the annihilation of the distance between the person and the materials and results of his learning action; it is the instrument which effects their organic union . . . /interests are/ the starting points, the initiatives, the working machines."

Dewey's reflection can be seen in Getzel's (1956) statement regarding the school child: "The critical difference between what he learns and what he does not learn in the classroom will, in most cases, be more a function of his interests than his intelligence."

Because of its theoretical interest, from time to time, researchers have addressed themselves to the problem of children's attitudes toward school. In 1933 Jersild published *Children's Fears, Dreams, Wishes, Daydreams, Likes, Dislikes, Pleasant and*

Unpleasant Memories. This research was based on interviews of 400 boys and girls (twenty-five each from ages five through twelve). A small portion of this research has application for the present study. Approximately 10% of Jersild's sample reported school or school subjects as being "disliked more than anything else in the world"; dislike for school increased markedly with age; boys disliked school more than girls; and less intelligent pupils expressed less enjoyment of school and curriculum than did brighter children. This result is consistent with Terman's (1947) findings that "gifted children were more interested than were unselected children in school subjects."

Jersild also found private-school children expressed more enjoyment of school and school subjects than public school children. Yet he also reports private school children disliked school and school subjects more than public school children.

That children may dislike school and still respond positively to some school-related items in a questionnaire is indicated by some other data derived from Jersild's study of private school children. Eight-five percent (85%) of his total sample expressed the desire to attend school rather than remain at home; yet only one-fifth of these children indicated enjoyment of school as a reason for desiring to attend school--one-half of this 85% giving the practical utility of an education as their reason. Public school children stressed the ulterior ends served by attending school even more than did private school children. Jersild concludes this discussion by noting the external rather than intrinsic rewards which keep children attending school: "As children grow older, they do not apparently grow more interested in school education as an end in itself."

Thorndike (1935) held interest and attitude to be synonymous with drive, which he believed should be "considered as a force by itself." In 1935, he published a series of studies reporting "work done to discover how wants, interests and attitudes influence learning." However, these are of limited value, being laboratory studies which were largely concerned with the effects of drive strength, reward and punishment, associative shifting, and the like.

In 1940, the California Elementary School Principals' Association devoted its twelfth yearbook to the study of elementary school children's interests. A number of its component studies are related to the present report. Bell (1940) used a broad-approach technique common to many studies at the time. Subjects were asked to write down questions about which they had been unable to receive satisfactory answers from home, school, church, or similar sources, the assumption being that the questions would reflect pupil's interests. The questionnaires, administered to 405 pupils from grades five through ten, indicated that, with age, there was a decrease of interest in science and nature, and an increase in vocational interest. He also found that interest in personal affairs increased suddenly during grades nine and ten.

In general, he found grades five and six to be primarily interested in nature and science; grades seven and eight to be interested in people and school life; and grades nine and ten to be interested in personal affairs, other people, religion, and politics.

By 1949 Jersild published Children's Interests, which was, in may respects, similar to his 1933 study but which focused on fewer areas and was executed on a far larger sample--over 3000 pupils. Although this report constituted a significant step forward in child interest research, it too had the broad approach so typical of the preceding studies, and only a small portion of the total study pertained to children's interests in school and school subjects. This investigation suffered further, in that it employed a technique, commonly used by others, which produces rather curious results. The questionnaire format required children to list best-liked and least-liked subjects in school. The use of such an open-ended technique is not particularly suited to the differential analysis of children's interests along a given dimension. Pupils who presumably have opinions regarding most, if not all, of the total range of school aspects can respond only once, on a maximum-minimum basis, the result being that only the more prominent aspects of school are included in such a study. As a consequence of this scoring procedure, items most frequently reported as "liked best" are also the same items most frequently reported as "liked least." Jersild acknowledged this problem and explains the effect with a "prominence" theory: The more prominent subjects in school elicit the strongest affect, either positive or negative, and are therefore reported. The body of opinion regarding prominent aspects of school tends to cancel each other out.

The most striking of Jersild's school related findings was the "decline, with age, of children's educational morale." In elementary school the proportion of negative wishes (such as "I wish I didn't have to go to school.") to positive wishes was one to one; by junior high school (Grades 8 and 9) the ratio jumped to more than ten to one; and by senior high school the ratio had dropped back to two to one.

The data thus clearly indicated that junior high school students were more derogatory and hostile toward school than either senior high school or elementary school pupils. Ten percent (10%) of the junior high pupils' wishes were in the derogatory category as compared to 5% and 1% respectively for the senior high and elementary school pupils.

Another striking feature was the increase, with age, of children's desire for skills, qualities, and vocational opportunities that would enable them to be independent. Only 10% of all high school pupils reported feeling that school prepares them for the problems of adult life.

There is also an apparent increasing discrepancy, with age, between a child's own goals and the goals he perceives the school to set. High school students also are more prone to express dislike of teachers, school programs, discipline, school rules, regulations, and the like. Yet, there is a discrepancy in what a pupil wishes for and what he likes best.

Affect for physical education classes increases with age until, at the high school age, one-third of the pupils list sports and gym as the best-liked feature of school.

There is also an increased interest in crafts and mechanical-vocational arts; there is an increase in interest in social activities outside of school; and there is an increased interest in self-understanding and vocational preparation. In the elementary grades only one-third of the pupils ever express any such interest. By junior high school, 58% of the pupils express such interest. And by senior high school, 70% of the pupils express wishes for self-improvement, self-understanding and vocational selection and preparation.

One of the more recent studies of the interest of youth is that of Witty for the U. S. Office of Education (1960). 2000 pupils from grades 3 through 9 were interviewed using, again, a free response questionnaire. The most interesting finding of Witty's is that "the subjects liked best are usually the ones in which the pupils received their best marks." Witty also found a drop over grades nine, ten, eleven, and twelve in the number of pupils who reported they intended to go to college, thus presumably reflecting either a decrease of financial status, or, more plausably, a drop in academic motivation.

Let us now summarize the findings of this and other research according to the dimensions that would be most relevant for our purpose.

Sex Differences. Lund (1944) and also Witty (1960) report that girls are less interested in sports and active games than are boys; and that both boys' and girls' interest in sports diminishes with age. Jersild, however, finds just the opposite and reports no difference in interst in sports between boys and girls in high school. One possible explanation for these conflicting results appears to be in the investigators' operational definition of interest.

Fitt (1956) finds that, generally speaking, girls like school more than boys. But Johnson (1959) found that girls in special classes for the retarded are much more negative toward the special class than are the boys. Jersild found, as is the case with most of his data, that boys exceed girls in listing school as both best-liked and least-liked of "anything else in the world."

Age Differences. Both of Jersild's studies (1933) (1949) indicate a generally increasing negativism, with age, toward school. Jersild (1949), and Baisden and Durkhard (1940), however, also report an increase, with age, in interest in sports and games and in social activities. Jersild also reports an increased concern with vocational problems and an increased dislike of teachers and of school discipline, and an increase in preference for nature and science studies. Bell (1940), however, in a study of grades 5 through 10 found a steady decrease in interest in science.

Intelligence Differences. Concerning the effect of intelligence on preference for school subjects, Terman (1947), in comparing the preferences of gifted and normal children, found no difference in the subjects preferred, but did find a difference in the intensity with which they were preferred. Blair (1939) used bright and dull junior and senior high school students, and found the same results. Jersild, however, reports that highly intelligent private school pupils like academics less than average public school pupils; and Witty found affect for a subject correlated positively with grades received in the subject.

Race Differences. Jersild (1933), using a very limited sample, found Negro grade school pupils to be more interested in social studies and less opposed to academic study in general that were their white counterparts. Negro pupils also expressed more dislike for their fellow pupils than did Caucasion children. Gregg (1938) found Negro high school students to be more academically than industrially inclined. Finally, Sheila Feld (personal communication) using Sarason's scale has found lower-class children more anxious regarding school and tests than middle-class children.

General Results. In addition to the research findings that can be classified according to the control variables of age, sex, intelligence, and social/socio-economic class, there is a further body of information that is of interest. Witty, for example, found that pupils most prefer those subjects in which they get their best grades. Jersild, Witty, and others have noted with some surprise that children's preference for academic study is at a relatively high degree of intensity all across the board. Yet Baisden found that in the 7th, 8th and 9th grades, academics were disliked two to three times as frequently as they were liked. The reverse, however, was true in elementary school.

Anxiety Studies. There is little doubt that children's school anxiety has considerable impact on intellectual functioning (Sarason, et al., 1960; Ruebush, 1963; Spielberger, 1966). General anxiety, as measured by the Children's Manifest Anxiety Scale (Castaneda, 1956), has been shown to negatively affect complex learning in children, IQ test performance (Dunn, 1964), and academic achievement (Bloom, 1963). Girls typically report higher socres on the Test Anxiety Scale for Children (Sarason, 1960) than boys, and age differences in anxiety have been reported by

Only recently has attention been shifted to the investigation of social class differences in children's school anxiety. Feld found Negro children in a Washington, D.C.-Maryland area to have higher school anxiety scores than white children, and Phillips (1966) has reported similar results with Mexican-American as contrasted to middle-class American children in the Austin, Texas area.

METHOD

Attention may now be directed to the questions of method, that is, to questions of the nature of the sample, the instrumentation used in the collection of data, and in the statistical methods of data analysis.[2]

Sample

A stratified, random sampling procedure was applied to the original data bank used for the present study. The original data bank consisted of data collected from more than 1400 students distributed across grades 5, 7, and 9 and across two different socio-economic levels. For the purposes of the present study, data for 480 students was drawn from the original master data deck, inasmuch as most of the computer programs intended for use require that sample designs include equal cell sizes. The basic statistical analysis called for an age X sex X social class paradigm which resulted in a twelve cell design. A random selection of 40 cases for each cell was executed, based on a table of random numbers. Thus, the total data analysis sample consisted of 480 students.

Age and Sex Characteristics. Tables 1 and 2 summarize the age and sex characteristics of the sample chosen for study in the present investigation.

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[2] The present study was carried out on data collected earlier by Morse, Bloom, and Dunn (1961).

TABLE 1

Means and Ranges of Subject Ages in Years by Grade and City

	Grade 5	Grade 7	Grade 9
Oak Park	X = 10.18	X = 12.08	X = 14.07
	R = 10-12	R = 11-13	R = 13-17
Det.	X = 10.72	X = 12.84	X = 14.48
	R = 10-13	R = 12-15	R = 13-17

TABLE 2

Ns, and Means and Standard Deviations of Subject Ages, in Years, by Sex

Grade		5		7		9	
Sex		F.	M.	F.	M.	F.	M.
Oak Park	N =						
		10.13	10.23	12.15	12.00	14.00	14.13
		0.46	0.42	0.43	0.23	0.51	0.72
Det.	N =						
		10.40	11.02	12.75	12.88	14.18	14.78
		0.63	0.83	0.74	0.88	0.64	0.80

Social Class Characteristics. City of residence was chosen as an index of social class inasmuch as it was felt that it was a more valid index of social class status than the traditional indices such as father's occupational level, parents average educational level, average income, etc. One portion of the data represented the responses of children drawn from an upper middle-class suburban school system. The data in this portion of the sample were drawn from five elementary schools, a junior high school, and a senior high school. On the basis of the 1960 U.S. Census Report, the community may be characterized as being a fairly homogeneous middle-class community. 99.5% of the residents were Caucasian. The median year of school completed by persons 25 years and over in this community was 12.4. Less than 3% of the potential male labor force were unemployed.[3] Of those employed, 80% were employed, fairly evenly, across the four middle-class/upper-class occupational groups: professional and technical workers; managers, officials and proprietors; salesworkers; and craftsmen and foremen. The median family income was $8,657.00; more than double that of the families in the Detroit census tract area representing the lower-class section of the present study. Although 6% of the upper middle-class community (Community A) families fell within the poverty level (yearly family income less than $3,000), over 70% of the families had incomes above the 1960 U.S. median family income of $6,500.

The lower socio-economic children were drawn from two schools; an elementary, and an intermediate school, drawn from the Core area, or the inter-city area, of Detroit, Michigan. According to the 1960 U.S. Census of this area, the school districts including these schools may be represented as a lower socio-economic level. The school district included was comprised of 21 Census tract areas. Ten of the census tract areas, however, could be characterized as commercial, industrial, or rooming house areas; that is, areas characterized by a very low number of family units which included children in public schools. Consequently, they were excluded from the description of this area.[4]

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[3] The unemployed category includes all those civilian males, 14 years of age and over, who were not at work, but who were looking for work.

Fifty-three percent (53%) of the residents of the eleven census tract areas were white; 46% were negro. The median schooling completed by persons 25 years and older was slightly less than 9 years.

Slightly more than one-fifth of the male population was unemployed. The largest proportion (41.3%) of employed males were working as machine operators. Another 34.2% were fairly equally distributed in the occupational groups: craftsmen and foremen; service workers (except private household); and laborers. Thus, three-fourths of the males who were employed were working in occupational groups typically classified as including middle to lower-class occupations. The median yearly family income was slightly less than $3,500. Forty-five percent (45%) of the Detroit families had a yearly income of less than $3,000; an income that placed them in the poverty category according to U.S. Government standards. Eighty-four percent (84%) of the families had incomes of less than the 1960 U.S. median family income.

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[4] The Census tracts used to describe the social class characteristics of the school area were 26, 27, 28, 30, 35, 36, 37, 38, 39, 41, and 42.

Tables 3 and 3A summarize the social class characteristics of the two school systems studied.

TABLE 3

Summary of 1960 Census Information

Population	Oak Park[1]	Detroit[2]
White	36,465	23,394
Percent	99.5%	53%
Negro	95	20,629
Percent	3%	46%
Other	69	309
Percent	2%	1%
Total	36,632	44,332
Persons per household	3.78	3.45
Median Rooms per household	5.4	4.4
Median Grade of School Completed (by persons 25 years of age and older.)	12.4	8.7[3]
Median Income	8,657	3,416
Percent males 14 years or older employed as:		
Professional, Technical & Kindred workers	20.8%	2.9%
Managers, Officials & Proprietors, ~~including farmers~~	21.1%	1.9%
Clerical and Kindred workers	5.4%	5.6%
Sales workers	22.0%	2.6%
Craftsmen, Foremen & Kindred workers	15.4%	13.0%
Operators and Kindred workers	9.2%	41.3%
Private Household workers	0.0%	0.0%
Service workers except private household	2.4%	10.0%
Laborers except Miners	1.3%	11.2%
Not ascertained	2.1%	11.4%
Percent unemployed[4]	2.5%	21.0%

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[1] The tally includes summary statistics for all three census tracts lying within the Oak Park School District.

[2] The tally is a summary of information about the Census Tracts whose areas are one-half or more within the Jefferson Intermediate and Franklin Elementary School Districts: Tracts #26, 27, 28, 30, 35,

TABLE 3 (cont'd)

[2] (cont'd) - 36, 37, 38, 39, 41 and 42. This tally does not, however, include summary statistics for those census tracts lying within the school district which didn't have at least 20% of the total population enrolled in grades K-12: Tracts #23, 24, 25, 29, 31, 32, 33, 34, 40 and 43.

[3] These figures for Detroit represent averages of medians supplied for each of the Detroit Census Tracts.

[4] As defined by the Census Tract the category "unemployed" includes all those males, fourteen years and older, who are civilians not at "work" (any work for pay or working 15 hours or more without pay on a family farm or in a family business) but were "presently" (within the last 6 months) looking for work.

TABLE 3A

Summary of 1960 Census Information
(cont'd)

Total Family Income for the year	% Within Range		% Within Range	
Range	Oak Park		Detroit	
$ 0 - 999	2%[5]	2%[6]	13%[5]	13%[6]
1,000 - 1,999	2	4	17	30
2,000 - 2,999	2	6	15	45
3,000 - 3,999	3	9	12	57
4,000 - 4,999	6	15	13	70
5,000 - 5,999	8	23	11	81
6,000 - 6,999	10	33	6	87
7,000 - 7,999	11	44	3	91
8,000 - 8,999	10	54	3	94
9,000 - 9,999	9	63	2	96
10,000 -14,999	25	88	3	99
15,000 -24,999	10	98	1	100
25,000 -	4	102	0	100

[5] Percentage

[6] Cumulative Percentage

Instrumentation

Data were collected via group administered multi-dimensional paper and pencil questionnaire inventories. Two forms of the questionnaire, Form A and Form B, were used with each class. Only the data regarding school attitudes and school anxiety were used in the present study, however.

All questionnaire items were of an objective, multiple choice, type. No open-ended questions were used and no written responses were required. Teachers were not present in the classrooms at the times of data collection. Research assistants administered the questionnaires orally; that is the entire questionnaire, instructions, items and response alternatives, were read aloud to the group. The children responded to each item immediately after it was presented. This procedure was used in order to minimize the effects of differences in reading ability and in order to obtain control over the pacing of responses to the questionnaire. Each form of the questionnaire took from 30 to 40 minutes to administer. They were usually executed on successive days. Under no condition did the time interval between the administration of the two forms of the questionnaire exceed one week. Samples of the sections of the questionnaires that are germain to the present study are included as Appendix A.

The anxiety assessment instrument was a modification of Sarason's Test Anxiety Scale for Children (Morse, Bloom, and Dunn, 1961; Dunn, 1964; and Dunn, 1965). Attitudes toward school were determined by having the child rate his attitudes on a six-point scale.

Anxiety Assessment. School anxiety was measured using a modified form of the Sarason Test Anxiety Scale for Children. The modification involved the use of a four-point response scale (often, sometimes, once in a while, never) rather than a two-point response scale (yes, no). This was done to give broader score spread and to render the instrument more appropriate for use with older subjects. The administration of the instrument was basically unchanged from the Sarason procedure. A detailed description of the modification can be found in a monograph by Morse, Bloom, and Dunn (1961).

The instrument was scored in two different ways: the summated raw score procedure which is the method ordinarily used in most anxiety questionnaire reasearch and the mean sub-scale t-score method proposed by Bergan (1966).

Attitudes Toward School Assessment. The degree to which children liked, and considered important, the various academic and social aspects of school were measured by asking the individual indicated the degree to which he either liked or considered important the various aspects of school represented in the particular question. There were four ratings on each of the four scales; that is, there were four ratings concerning the degree of the child's "affect" for academic aspects of school; four ratings concerning the degree of "affect" the child had toward social aspects of school; four ratings of the degree to which the child considered the academic aspects of school important; and four ratings of the degree to which the child considered the social aspects of school important.

Scoring of the attitudes ratings scale was also accomplished via the two methods, i.e., the raw score and the t-score method. In the raw score method, an individual's affect score, for example, was the sum of the individual's score ratings regarding the particular aspects of school under consideration. Inasmuch as the relational hypotheses dealt with school anxiety, only affect for and perceived value of the academic aspects of school were considered in the t-score rating procedure. Affect for and perceived importance of the social aspects of school were used as buffer items.

Regarding the earlier paragraph on anxiety testing, the mean sub-scale t-scoring procedure was used first to produce t-scores for the entire TASC scale and later for the factor test anxiety scale only. Buffer items used for the full TASC scoring procedure were the items in the sections "about school" excluding item number six of that scale, "about your teacher" and "about your class."

Data Analysis Procedures

Data analysis was performed at the University of Michigan Data Processing Center on an IBM 7090 computer. Correlation and multi-variant analysis procedures were used.

The multi-variant analyses employed were: analysis of variance, the multiple classification analysis program, and the filter means program.

The analysis of variance program was a standard program written by Dr. J. C. Lingos of the University of Michigan. It is a standard analysis of variance program handling up to thirteen variables. The program analyzes all possible interaction effects.

The revised multiple classifications analysis program was written by Mr. Frank Andrews of the University of Michigan Institute for Social Research. The multiple classification analysis program is a complex technique of multivariant analysis which examines the relationship of each of several predictor variables to a dependent variable while all other predictor variables are held constant. The program assumes the effects of predictors to be additive only; that is, it assumes no interaction effects. The advantage of the program over conventional analysis of variance procedures is that the multiple classification analysis program does not require equal cell size. By examining the unadjusted cell means for each category, one can tell whether the predictor variable has any relationship with the dependent variable, and if so, whether this relationship is positive, negative, linear, or curvilinear. The examination of the adjusted means shows dependent-predictor variable relationships after the effects of all other predictors are held constant (i.e., partialed out). The program also determines, for each predictor variable, an eta coefficient which, when squared, indicates the proportion of variance in the dependent variable explained by the unadjusted deviation. Inasmuch as the multiple classification analysis program, however, assumes no interaction effects, the eta square value is always higher than the omega square value, the analogous statistic used in analysis of variance research.

In addition to the above, the program also provides adjusted multiple correlation coefficients which, when squared, indicate the proportion of the variance in the dependent variable explained by all predictor variables simultaneously. It is because of this last property that the multiple classification analysis program was used.

The filter means program is a second program made available for IRCOPPS use by the Institute for Social Research. The filter means program produces statistics for data on which one or two controls have been exercised. The program yields means, standard deviations, and other statistics on a continuous, dependent variable for which a second variable is used as a control variable. Each coded category of the control variable is examined. For example, by designating sex of a respondent as a control variable, one could use the program to determine the mean anxiety scores as well as the standard deviations, sums of scores, and sums of squared scores, for each of the two sexes. An additional control allows the program user to select a further sub-set of the data for analysis by designating a range of valid cues of a third variable. This third variable is called a filter variable. For example, if the age of the respondent was used in the filter variable option, the researcher could expand the above-mentioned analyses to compute summary statistics for five-year-old males, six-year-old males and seven-year-old males. For each table, regardless of whether the filter option is used, the sum of squares about the mean, the between group sum of squares, the within group sum of squares, the eta coefficient, and the f ratio are given. The filter means program, as well as the multiple classification analysis, assumes no interaction among the variables. Although both programs provide approximately the same multi-variant analysis, the filter means program has the advantages of: 1) calculating f ratios and 2) filtering across control variables.

The MCA program and the filter means program were used to supplement the traditional analysis of variance procedure. In analysis of variance, which assumes interaction effects, no breakdown is provided which will allow the individual to identify the source or origin of the significant interactions. Presumably, one would have to identify those interactions by hand techniques. Furthermore, certain combinations of variable packages are not independent. The use of the filter means and multiple classifications programs allows the user to analyze pre-selected independent groupings for the source of interaction effects.

The second type of analysis procedure used was a correlational analysis. Standard Pearson product-moment correlations were conducted on the data matrix.

RESULTS

Results are summarized in Tables 4 through 12. More complete data tables, Tables 13-60, will be found in Appendix A. Eleven of the 15 group difference hypotheses received some degree of substantiation. Six were reported through analysis of variance; 5 more received partial support through filter means analysis.

Summary. In general it was found that as students grow older, they like both the social aspects of school and the academic aspects of school less (significant at the .01 level). For the most part, this is true regardless of sex, or social class.

Upper middle class children also appear to devalue school, both the academic as well as the social aspects, as they grow older (.01 level). This was not true of lower class children in the sample, however.

Regarding sex differences, elementary school girls report they like the academic aspects of school more than elementary age boys (.05 level), but there is a steady decline with age in both the degree to which girls like the academic aspects of school (.01 level) and the degree to which they value them (.01 level). Girls, however, tend to remain higher than boys in the value they place on academics.

Interestingly, there are no sex differences in the degree to which boys or girls value or enjoy the social aspects of school. There is a decrease with age, however, in the degree to which girls like the social aspects of school (.01 level).

Regarding lower class differences, lower class adolescents report they both value, and enjoy, the academic aspects of school more than upper class children (.01). This is true for all grade levels and for both sexes. They also value social contacts more (.01).

There are no social class differences in the degree to which children enjoy the social aspects of school, however. Judging from these results, it is possible that the social aspects of school are largely independent of the value structure of school authorities and are more in the hands of children than of adults.

Regarding anxiety, significant differences were found with respect to sex and social class. The results were limited, however. In the present study lower socioeconomic class children, particularly in elementary school (.01), manifest considerably more test anxiety than middle class children.

Sex differences were manifested only at the 7th grade level (.01) where females indicated greater test anxiety than males.

The anxiety dynamics hypotheses were not substantiated. There were no statistically significant differences between the TASC scores of the four quadrant groups. Anxiety did appear to be significantly related, negatively, to affect for academics (.05 level) and to value for academics (.01 level) for middle class children.

There was strong, although indirect, evidence that social desirability or response acquiescence was not operative with the lower class subjects. Value for academics, for example, correlated .52 (.01 level) with affect for academics, but only .10 (NS) for value for the social aspects of school. Had response set been operative, such meaningful differences in response patterning would not have been evident.

TABLE 4

Summary Graphs
Mean Scores and Significant Differences
TASC

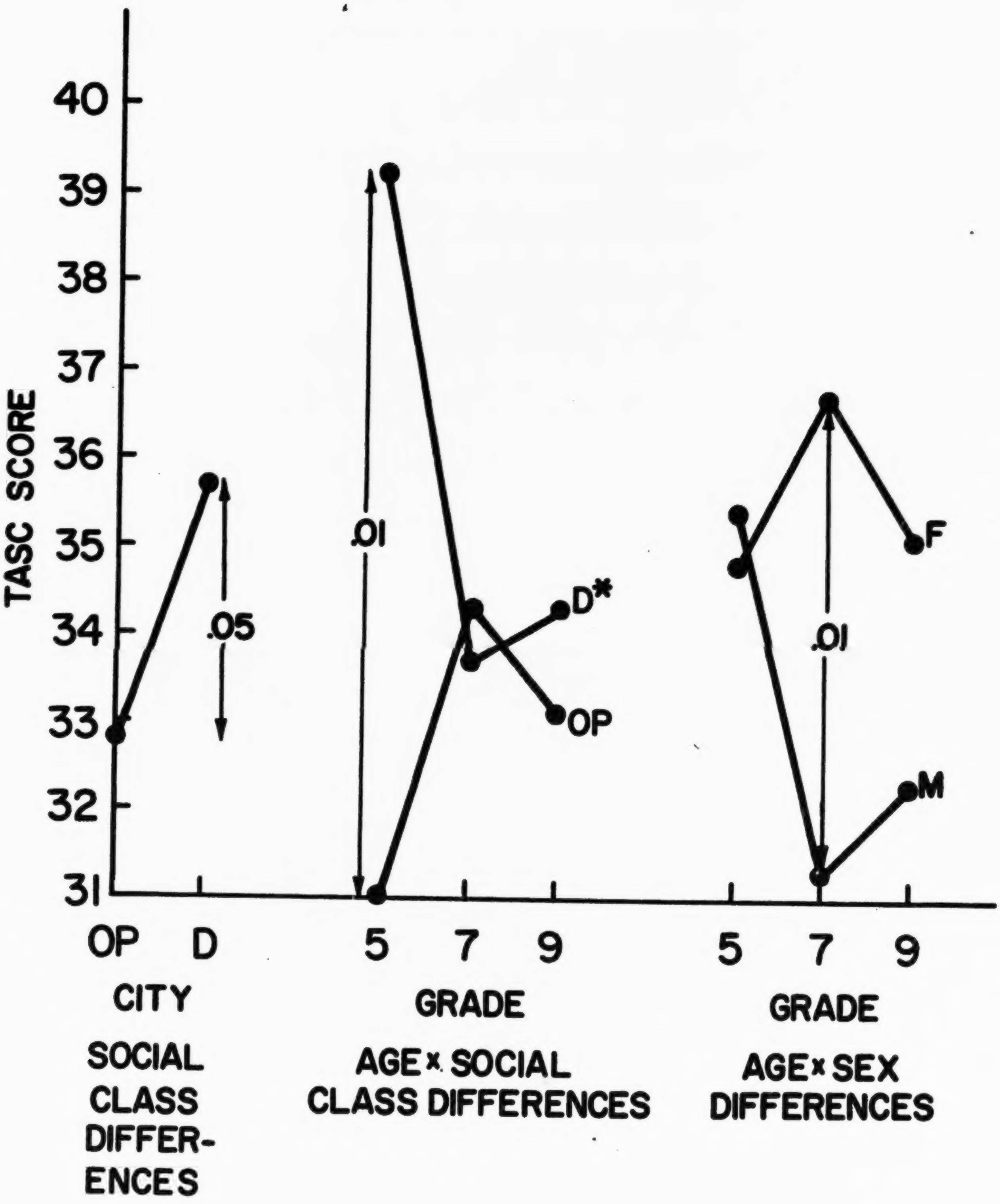

TABLE 5

Summary Graphs

Mean Scores and Significant Differences

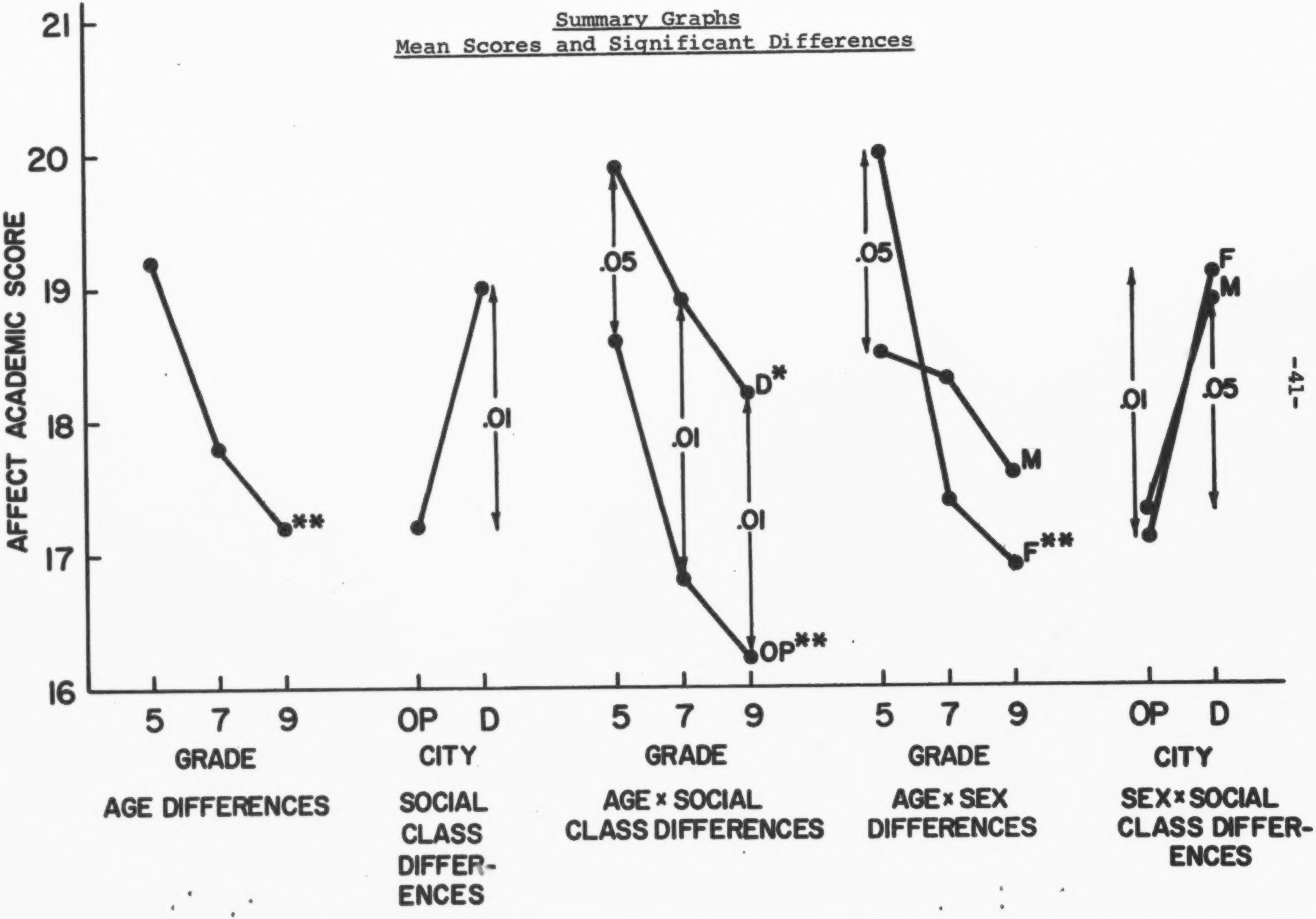

TABLE 6

Summary Graphs
Mean Scores and Significant Differences
Value Academic

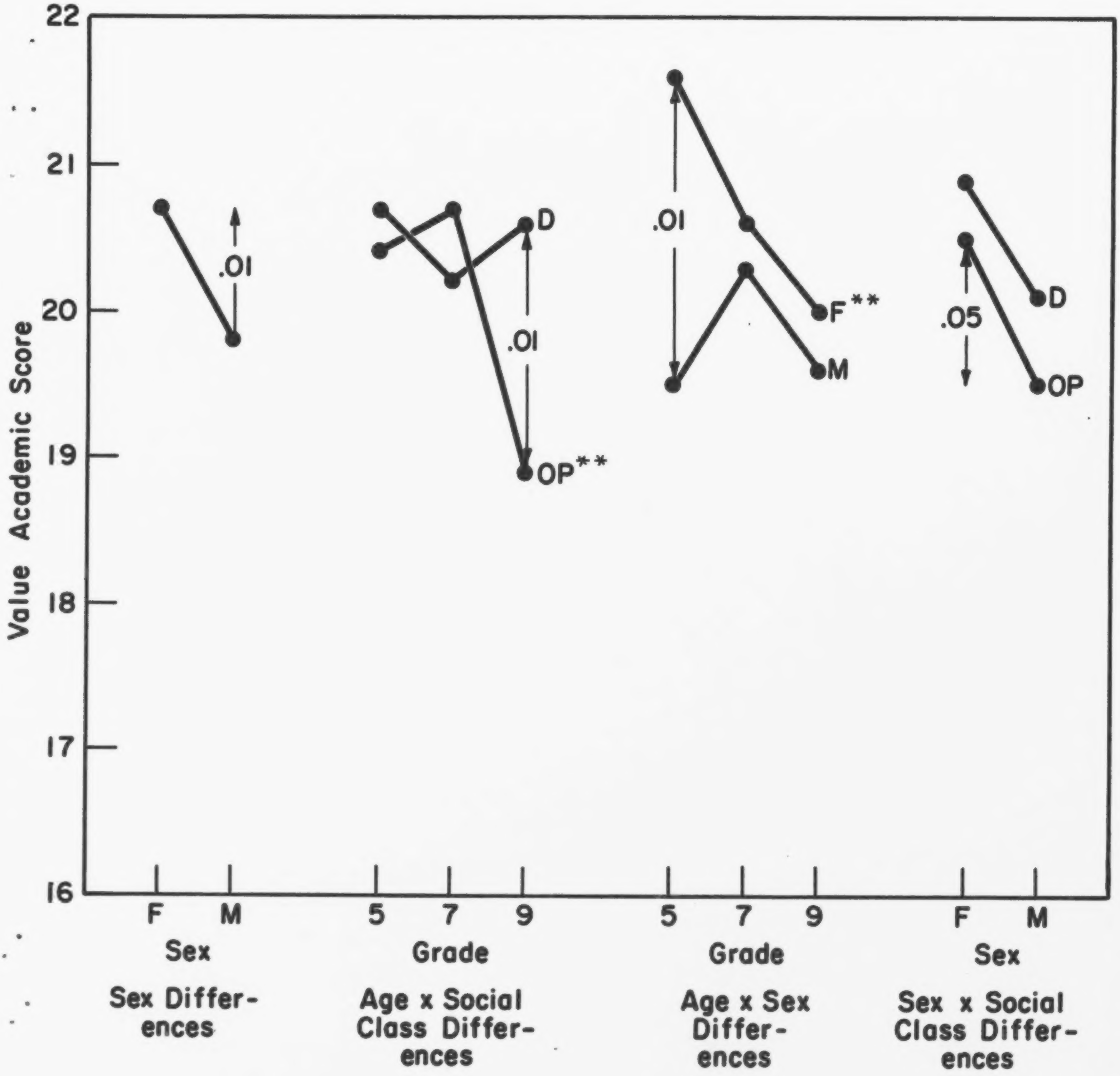

TABLE 7

Summary Graphs
Mean Scores and Significant Differences
Affect Social

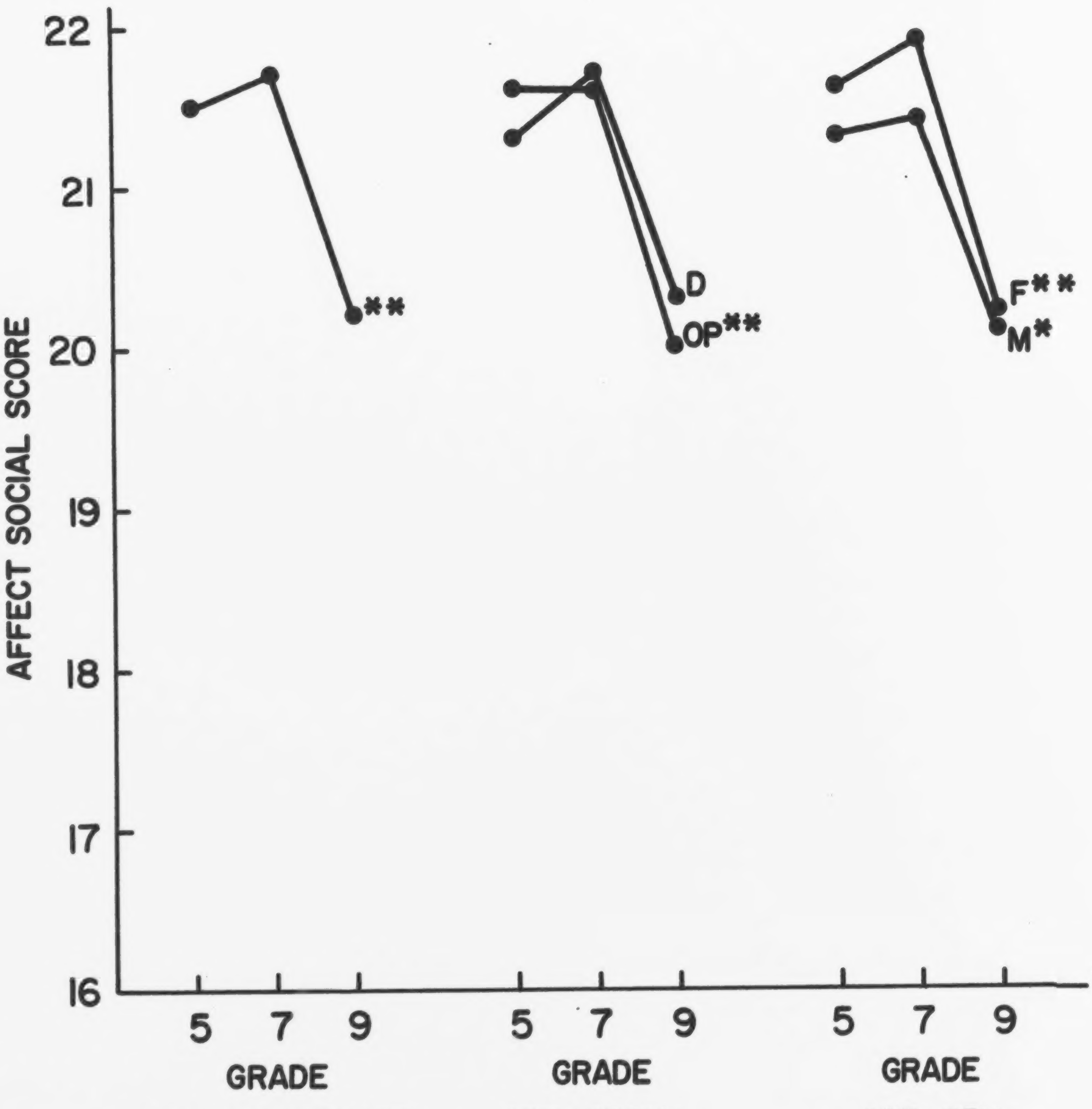

TABLE 8

Summary Graphs
Mean Scores and Significant Differences
Value Social

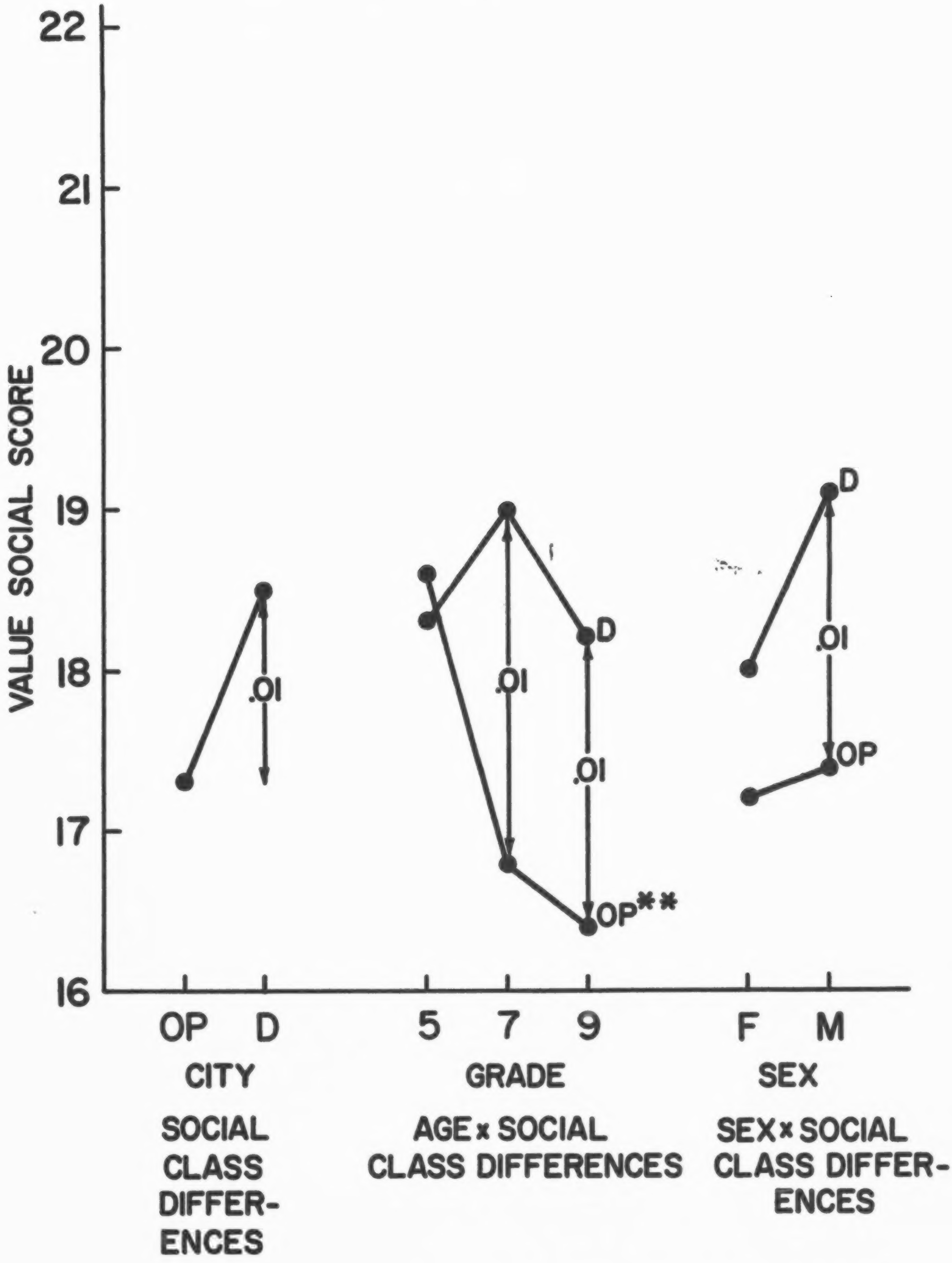

TABLE 9

Summary of Significant Group Differences Findings

ANALYSIS	DIMENSION	TASC		Affect Academic		Value Academic		Affect Social		Value Social	
		Sign. Level	% of Var. Acc't for	Sign. Level	% of Var. Acc't for	Sign. Level	% of Var. Acc't for	Sign. Level	% of Var. Acc't for	Sign. Level	% of Var. Acc't for
3-Way Analysis of Variance	Age			**	4%			**	4%		
	Sex					**	2%				
	Soc. Class	*	1%	**	5%					**	2%
	Age x Sex			*		*					
	Age x Soc. Class	*								*	
	Sex x Soc. Class										
Filter Means	Age: F			**	11%	**	5%	**	5%		
	M							*	4%		
	OP			**	7%	**	5%	**	9%	**	5%
	D	*	3%	*	4%						
	Sex: 5			*	4%	**	9%				
	7	*	3%								
	9										
	OP					*	2%				
	D										
	Soc. Class 5	**	6%	*	3%						
	7			**	6%					**	7%
	9			**	7%	**	7%			**	4%
	F			**	6%						
	M			**	4%					**	4%
Multiple Regression	All Predictors Combined			**	8%	**	3%	*	3%	**	3%

TABLE 10

Variable Intercorrelations
Oak Park Matrix - N=240

	Affect Academic	Affect Social	TASC	Value Academic	Value Social	Grade
Affect Social	.05					
TASC	-.14*	-.05				
Value Academic	.55**	.08	-.20**			
Value Social	-.02	.29**	.03	-.12*		
Grade	-.25**	-.26**	.05	-.18**	-.21**	
Sex	-.03	.02	-.11	-.15*	.02	.00

TABLE 11

Variable Intercorrelations
Detroit Matrix - N=240

	Affect Academic	Affect Social	TASC	Value Academic	Value Social	Grade
Affect Social	.26**					
TASC	-.07	.04				
Value Academic	.52**	.18**	-.03			
Value Social	.18**	.42**	.00	.10		
Grade	-.17*	-.11	-.13*	-.01	-.01	
Sex	.02	-.10	-.05	-.12*	.12*	.00

TABLE 12

Analysis of Variance of TASC Scores

Analysis Group	N	$\overline{X}$	σ	ΣX	ΣX^2
Like Academics/Value Academics	167	33.5	15.6	5,598	228,300
Like Academics/Devalue Academics	82	32.8	13.0	2,691	101,973
Dislike Academics/Value Academics	56	36.0	16.4	2,016	87,284
Dislike Academics/Devalue Academics	175	35.1	16.7	6,146	264,346

SS_T	118,079
SS_B	561
SS_W	117,518
F	0.8

TASC

Social class is apparently related to TASC scores: students in Detroit have signigicantly higher (.05) TASC scores than students in Oak Park. When the predictor variable is broken down according to the filtering technique, however, the relationship is significant at only the 5th grade level (.01). Fifth grade Detroit students' scores average 8 points higher than those of fifth grade Oak Park students.

Social class accounts for 6% of the variance in the 5th grade but only .9% of the over-all variance. This finding can be interpreted to mean that although the F-ratio for City as a predictor of TASC scores is significant, it seems this ratio is deceptively high. The significant F score is almost entirely due to the interaction between grade in school and city.

There is no over-all significant relationship between either Grade and TASC scores or Sex and TASC scores. In Detroit, however, the 5th grade child's average TASC score is almost 6 points higher than 7th graders' scores; while 5th graders score about 5 points higher than 9th graders. In the 7th grade, females' TASC scores are significantly higher than males' scores.

The three predictors of age, sex, and social class combined counted for less than 1% of the variance ($Eta^2 = .008$).

Affect Academic

Affect Academic scores are significantly higher in Detroit than in Oak Park. This relationship holds true across all three grade levels and for males as well as for females. The over-all percentage of the variance accounted for by city is 5%.

Affect Academic scores are negatively related to grade in school (i.e., the lower the grade, the higher the Affect Academic scores). This relationship holds true in both cities; however, it is only significant for females.* The over-all percentage of the variance accounted for by grade is 4.3%.

Although there fails to be a significant relationship between Sex and Affect Academic scores, there is a significant relationship in the 5th grade: girls score higher than boys.

The percentage of the variance accounted for by all three variables combined is 8.3% (Multiple r squared).

Value Academic

There is a significant relationship between Sex and Value Academic scores: females value the academic aspects of school to a greater degree than do the male students. This relationship holds true only in the 5th grade, however. As was the case with TASC scores, it seems likely that the differences in the variances for males and females in the 5th grade are large enough to account for the over-all relationship between Sex and Value Academic scores. In the 5th grade, Sex accounts for 9% of the variance whereas Sex accounts for only 2% of the over-all variance. There seems to be an interaction effect between Sex and City, as between Sex and Grade, although the interaction of the former is not as large as in the latter case. In Oak Park, females score higher than males and Sex accounts for 2% of the variance in Value Academic scores.

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*The difference between mean Oak Park and Detroit Affect Academic scores increases with grade; and there is a larger discrepancy between female scores on the dependent variable than between males' scores.

Although neither Grade nor City are related to Value Academic scores at an acceptable level of significance, the Filter Means analysis revealed significant negative relationships between Grade and Value Academic scores for Oak Park students ($Eta^2 = 0.05$) and for female students ($Eta^2 = 0.05$) and significant relationships between City and Value Academic scores for 9th graders ($Eta^2 = 0.07$). Oak Park students scored lower than Detroit students.

All three predictors combined account for a significant proportion of the variance ($Eta^2 = 0.03$).

Affect Social

Grade accounts for 4% of the variance in Affect Social scores.

In Oak Park there is a significant negative relationship between grade in school and affect for the social aspects of school. In Detroit the relationship is in the same direction; however, it is not a significant relationship. In both communities, the real drop in Affect Social scores is between the seventh and ninth grades. When community differences are not controlled, there remains a significant negative relationship between grade and affect academic scores. It is interesting to note that by the seventh grade the students have increased their liking for the social aspects of school, but that by the time the students are in the ninth grade, this affect falls below its fifth grade level.

Further analysis of grade as a predictor of Affect Academic scores (by means of the filter means technique) shows that the relationship between grade in school and Affect Academic scores holds true for males as well as females, but that Sex alone is not a significant predictor of liking for the social aspects of school. Females' mean scores are slightly higher than males' scores in all three grades. It is interesting to note that both male and female mean Affect Academic scores increase slightly by the 7th grade, but that they dip down (below the 5th grade mean score) by the 9th grade.

All three predictors account for a significant amount of the variance in Affect Social (significant at .01 level). Eta squared is only .03, however.

Value Social

City accounts for 2% of the over-all variance in Value Social scores. There is some indication of an interaction effect between Grade and City and between Sex and City, however. The relationship between City and Value Social scores holds true only in the 7th and 9th grades and for only males. In every case, Detroit students value the social aspects of school to a larger degree than their Oak Park counter-parts.

Although all three predictors combined account for a significant proportion of the variance (Multiple $R^2 = 0.03$) it seems likely that two thirds of the variance can be accounted for by City alone (Eta^2 for grade = 0.01; for Sex = 0.005). In Oak Park, Grade is negatively related to Value Social scores and accounts for 5% of the variance.

Relationships Between TASC and School Attitudes

There were no significant correlations between TASC and any of the five predictor variables in Detroit. In Oak Park, however, TASC scores were lower and were negatively related to Affect Academic scores ($r = -.14$) and to Value Academic scores ($r = -.20$).

The data seem to indicate that the Oak Park child has the luxury of a defense mechanism which enables him to deny the importance of academics. The data also lend support to the notion that lower class children (Detroit) perceive school as a necessary means for advancement. There must be pressures on children in both cities, yet the Detroit children are more concerned about school (as indicated by the higher TASC scores* for Detroit children, the lower mean affect academic scores for Oak Park children and the lower Value Academic scores for the Oak Park children**).

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*The Detroit TASC scores are only significantly higher in the 5th grade.

It is interesting to note that both middle and lower socioeconomic class children manifest similar academic affect-value patterns (.52 and .55, respectively). They also tend to manifest similar patterns with respect to the social aspects of school, and they manifest similar age-affect for academic patterns (-.17 and -.25, respectively). Lower class subjects also manifest highly significant (.01 level) negative relationships between age and affect for the social aspects of school (-.26), value for the social aspects (-.21) and value academic (-.18).

One way analysis of variance, where each category was a quadrant group (e.g., like academics - value academics or dislike academics - devalue academics) did not yield a significant F ratio. Thus it must be concluded that there are no differences in mean TASC scores for the various quadrant groups.

DISCUSSION

The age and sex findings of the present study are, by and large, consonant with earlier findings. It is felt that the socioeconomic findings of this study, however, are of special interest in view of the fact that they do not jibe with some of the stereotyped notions that have long been

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**The Oak Park Value Academic scores are only significantly lower in the 9th grade.

entertained with respect to lower class children in middle class school settings. For example, it appears that the lower class child both appreciates and values the academic aspects of school much more than he has been given credit for in the past. What's more, he also is apparently much more concerned with doing well, at least as far as test anxiety suggests this.

These last findings regarding social class and anxiety have since been corroborated by Sheila Feld at the National Institute of Mental Health. Dr. Feld has also found lower class children to have a higher degree of test anxiety than middle class children.

Two separate hypotheses regarding why this should be so may be suggested. One holds that the lower class child's school anxiety is, in fact, reality oriented inasmuch as he typically has met with a high degree of failure in school activities, hence confrontation with further possible failure is anxiety arousing. The other explanation holds that, for the lower class child, educational success is a necessary requisite for upward mobility; thus more of his future is at stake in the testing situation than is the case with the middle class child. If only test anxiety scores are inspected, it would appear that the former hypothesis has the edge. If value for academics is also considered, however, one is met with the peculiar pattern of lower class values for academic pursuits remaining reasonably high whereas middle class values for academics fall off drastically at adolescence, and especially for males.

It is possible that middle class adolescents increasingly see the academic aspects of school as having less and less bearing on their eventual vocational success. This is not the case with middle class females, however, who presumably are grooming themselves, at least temporarily, for a career. Whereas a middle class male has certain social factors such as parental support, the possible entry into the father's business, and the like, going for him, girls must compete in the professional market place on their own merit alone. Thus, middle class females could be expected to be, and are, more like lower class males in the degree to which they value the academic aspects of school than they are like middle class males.

To recapitulate, then, the following are the major findings of the present study:

a) As children grow older they increasingly dislike both the academic as well as the social aspects of school.

b) In elementary school, girls like and value academics more than boys; but these sex differences disappear as children grow to increasingly dislike and devalue the academic aspects of school.

c) Lower socioeconomic children at all ages and both sexes report liking the academic aspects of school more than upper class children. As they grow older and move into adolescence, lower socioeconomic class children continue to value the academic aspects of school whereas their upper middle class counter-parts come to increasingly dislike and devalue them.

d) As lower class children grow older they report that they also value the social aspects of school more than upper middle class children.

e) Lower class children, especially in the elementary grades, are much more anxious with regard to doing well in school than their middle class counter-parts; that is, they report a higher degree of school anxiety.

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APPENDIX A

Data Analysis Tables

The following symbols and abbreviations are used throughout:

OP	Oak Park
D	Detroit
F	Female
M	Male
**	Indicates the results are significant at the .01 level or better.
*	Indicates the results are significant at the .05 level.
ω^2	Omega squared is an estimate of the proportion of the variance accounted for by a predictor variable or a combination of predictor variables acting in concert. The formula is: $\omega^2 \ Y/X = \frac{\text{SS columns} - (C-1) \text{ MS error}}{\text{MS error} + \text{SS Total}}$ $\omega^2 \ Y/Z = \frac{\text{SS rows} - (R-1) \text{ MS error}}{\text{MS error} + \text{SS Total}}$
η^2	Eta squared represents a form of correlation proportion, that is, it is an estimate of the proportion of the variance accounted for by a particular predictor variable, assuming no variable interaction. The formula is: $\eta^2 = \frac{\text{SS of the unadjusted deviations}}{\text{Total SS about the grand mean}}$

CHILDREN'S TASC SCHOOL ANXIETY

TABLE 13

2x2x3 Analysis of Variance

Source of Variation	SS	df	MS	F	ω^2
Grade	176.1	2		0.4	
Sex	757.5	1	757.5	3.1	
City	1,017.9	1	1,017.9	4.2*	.007
Grade x Sex	747.2	2	373.6	1.5	
Grade x City	1,748.7	2	874.4	3.6*	.01
Sex x City	77.6	1	77.6	0.3	
Gr. x Sex x City	50.7	2	25.4	0.1	
Within Cells	113,503.5	468	242.5		
Total	118,079.3	479			

TABLE 14

Filter Means Analysis - Detroit Sample Only

Predictor Variable	$\overline{X}$	σ	ΣX	ΣX^2
Grade				
5	39.2	16.6	3,137	144,809
7	33.7	15.3	2,693	109,263
9	34.3	14.4	2,745	110,655
Total	35.7	15.6	8,575	364,727
SS_T	58,349.4			
SS_B	1,472.9			
SS_W	56,876.5			
η^2	.03			
F	3.1*			

TABLE 15

Filter Means Analysis - Seventh Grade Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Sex				
Female	36.7	16.5	2,938	129,476
Male	31.3	15.1	2,502	96,187
Total	34.0	16.0	5,440	225,664
SS_T	40,704.0			
SS_B	1,188.1			
SS_W	39,515.9			
η^2	.03			
F	4.8*			

TABLE 16

Filter Means Analysis - Fifth Grade Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
City				
Oak Park	31.0	17.1	2,481	100,023
Detroit	39.2	16.6	3,137	144,809
Total	35.1	17.3	5,618	244,832
SS_T	47,570.0			
SS_B	2,689.6			
SS_W	44,880.4			
η^2	.06			
F	9.5**			

TABLE 17

Multiple Regression Analysis

All Predictors

$$F = \frac{1951.5/4}{116127.7/475} \quad \frac{487.9}{249.4} \quad = 2.0 \text{ NS}$$

Multiple $R^2 = .008$

Single Predictors

	Grade			Sex		City	
	5	7	9	F	M	OP	Det
Mean	35.1	34.0	33.7	35.5	33.0	32.8	35.7
ETA^2		0.001		0.006		0.009	
F		0.4		3.1		4.2*	

Filtered Predictors

1. Grade

	Detroit	
	Mean	SD
5th Grade	39.2	16.6
7th Grade	33.7	15.3
9th Grade	34.3	14.4
SS_t	58349.4	
SS_B	1472.9	
SS_W	56876.5	
ETA^2	0.03	
F	3.1*	

2. Sex

	7th Grade	
	Mean	SD
Female	36.7	16.5
Male	31.3	15.1
Total	34.0	16.0
SS_t	40704.0	
SS_B	1188.1	
SS_W	39515.9	
ETA^2	0.03	
F	4.8*	

3. City

	5th Grade	
	Mean	SD
Oak Park	31.0	17.1
Detroit	39.2	16.6
Total	35.1	17.3
SS_t	47570.0	
SS_B	2689.6	
SS_W	44880.4	
ETA^2	0.06	
F	9.5**	

	F	5%	2.5%	1%
*Df B = 4				
W/n = 475		2.37	2.79	3.32

CHILDREN'S AFFECT FOR THE ACADEMIC ASPECTS OF SCHOOL

TABLE 18

2x2x3 Analysis of Variance

Source of Variation	SS	df	MS	F	ω^2
Grade	344.6	2	172.3	11.4**	.04
Sex	0.2	1	0.2	0.0	
City	378.1	1	378.1	25.1**	.05
Grade x Sex	127.8	2	63.9	4.2*	.01
Grade x City	19.1	2	9.6	0.6	
Sex x City	3.3	1	3.3	0.2	
Gr. x Sex x City	20.1	2	10.0	0.7	
Within Cells	7,058.0	468	15.1		
Total	7,951.2	479			

TABLE 19

Filter Means Analysis - Oak Park Sample Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Grade				
5	18.6	3.7	1,491	28,841
7	16.8	4.3	1,343	24,031
9	16.2	3.5	1,297	21,973
Total	17.2	4.0	4,131	74,845
SS_T	3,740.2			
SS_B	256.9			
SS_W	3,483.3			
η^2	.07			
F	8.7**			

TABLE 20

Filter Means Analysis - Detroit Sample Only

Predictor Variable	$\bar{x}$	σ	Σx	Σx^2
Grade				
5	19.9	3.8	1,588	32,670
7	18.9	4.2	1,511	29,931
9	18.2	3.9	1,458	27,758
Total	19.0	4.0	4,557	90,359
SS_T	3,833.0			
SS_B	106.8			
SS_W	3,726.1			
η^2	.04			
F	3.4*			

TABLE 21

Filter Means Analysis - Females Only

Predictor Variable	$\bar{x}$	σ	Σx	Σx^2
Grade				
5	20.0	3.6	1,596	32,838
7	17.4	4.1	1,392	25,556
9	16.9	3.7	1,351	23,923
Total	18.1	4.0	4,339	82,317
SS_T	3,871.5			
SS_B	430.5			
SS_W	3,441.0			
η^2	.11			
F	14.8**			

TABLE 22

Filter Means Analysis - Fifth Grade Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Sex				
Female	20.0	3.6	1,596	32,838
Male	18.5	3.9	1,483	28,673
Total	19.2	3.8	3,079	61,511
SS_T	2,259.5			
SS_B	79.8			
SS_W	2,179.7			
η^2	.04			
F	5.8*			

TABLE 23

Filter Means Analysis - Fifth Grade Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
City				
Oak Park	18.6	3.7	1,491	28,841
Detroit	19.9	3.8	1,588	32,670
Total	19.2	3.8	3,079	61,511
SS_T	2,259.5			
SS_B	58.8			
SS_W	2,200.7			
η^2	.03			
F	4.2*			

TABLE 24

Filter Means Analysis - Seventh Grade Only

Predictor Variable	$\bar{x}$	σ	Σx	Σx^2
City				
Oak Park	16.8	4.3	1,343	24,031
Detroit	18.9	4.2	1,511	29,931
Total	17.8	4.4	2,854	53,962
SS_T	3,053.8			
SS_B	176.4			
SS_W	2,877.4			
η^2	.06			
F	9.7**			

TABLE 25

Filter Means Analysis - Ninth Grade Only

Predictor Variable	$\bar{x}$	σ	Σx	Σx^2
City				
Oak Park	16.2	3.5	1,297	21,973
Detroit	18.2	3.9	1,458	27,758
Total	17.2	3.8	2,755	49,731
SS_T	2,293.3			
SS_B	162.0			
SS_W	2,131.3			
η^2	.07			
F	12.0*			

TABLE 26

Filter Means Analysis - Females Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
City				
Oak Park	17.1	3.7	2,053	36,721
Detroit	19.1	4.1	2,286	45,596
Total	18.1	4.0	4,339	82,317
SS_T	3,871.5			
SS_B	226.2			
SS_W	3,645.3			
η^2	.06			
F	14.8**			

TABLE 27

Filter Means Analysis - Males Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
City				
Oak Park	17.3	4.2	2,078	38,124
Detroit	18.9	3.9	2,271	44,763
Total	18.1	4.1	4,349	82,887
SS_T	4,079.5			
SS_B	155.2			
SS_W	3,924.3			
η^2	.04			
F	9.4*			

TABLE 28

Multiple Regression Analysis

All Predictors: Grade, Sex, City

$$F = \frac{722.0/4}{7228.3/(480-7+3-1)} = \frac{180.7}{7228.3/475} = 11.9$$

Multiple $R^2 = 0.083$

Single Predictors

	Grade			Sex		City	
	5	7	9	F	M	OP	Det.
Mean	19.2	17.8	17.2	18.1	18.1	17.2	19.0
ETA^2	0.04			.00003		0.048	
F	8.6**			0.01		23.9**	

Filtered Predictors

1. Grade

	Oak Park		Detroit		Female	
	Mean	SD	Mean	SD	Mean	SD
5th Grade	18.6	3.7	19.9	3.8	20.0	3.6
7th Grade	16.8	4.3	18.9	4.2	17.4	4.1
9th Grade	16.2	3.5	18.2	3.9	16.9	3.7
Total	17.2	4.0	19.0	4.0	18.0	4.0
SS_T	3740.2		3833.0		3871.5	
SS_B	256.9		106.8		430.5	
SS_W	3483.3		3726.1		3441.0	
ETA^2	0.07		0.04		.11	
F	8.7**		3.4*		14.8**	

2. Sex

	5th Grade	
	Mean	SD
Female	20.0	3.6
Male	18.5	3.9
Total	19.2	3.8
SS_T	2259.5	
SS_B	79.8	
SS_W	2179.7	
ETA^2	0.04	
F	5.8*	

TABLE 28 (Continued)

3. City

	5th Grade		7th Grade		9th Grade		Female		Male	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Oak Park	18.6	3.7	16.8	4.3	16.2	3.5	17.1	3.7	17.3	4.2
Detroit	20.0	3.8	18.9	4.2	18.2	3.9	19.1	4.1	18.9	3.9
Total	19.2	3.8	17.8	4.4	17.2	3.8	18.1	4.0	18.1	4.1
SS_t	2259.5		3053.8		2293.3		3871.5		4079.5	
SS_B	58.8		176.4		162.0		226.2		155.2	
SS_W	2200.7		2877.4		2131.3		3645.3		3924.3	
ETA^2	0.03		0.06		0.07		0.06		0.04	
F	4.2*		9.7**		12.0**		14.8**		9.4*	

CHILDREN'S VALUE OF THE ACADEMIC ASPECTS OF SCHOOL

TABLE 29

2x2x3 Analysis of Variance

Source of Variance	SS	df	MS	F	ω^2
Grade	61.5	2	30.8	2.6**	.006
Sex	104.5	1	104.5	9.0	
City	30.0	1	30.0	2.6	
Grade x Sex	83.5	2	41.8	3.6*	.01
Grade x City	96.9	2	48.5	4.2*	.01
Sex x City	1.9	1	1.9	0.2	
Gr. x Sex x City	43.7	2	21.9	1.9	
Within Cells	5,452	468	11.7		
Total	5,874.9	479			

TABLE 30

Filter Means Analysis - Oak Park Sample Only

Predictor Variable	$\bar{x}$	σ	Σx	Σx^2
Grade				
5	20.4	3.6	1,634	34,402
7	20.7	3.6	1,652	35,130
9	18.9	3.2	1,511	29,373
Total	20.0	3.6	4,797	98,905
SS_T	3,025.0			
SS_B	147.2			
SS_W	2,877.7			
η^2	.05			
F	6.1**			

TABLE 31

Filter Means Analysis - Females Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Grade				
5	21.6	2.7	1,729	37,953
7	20.6	3.5	1,646	34,812
9	20.0	3.2	1,594	32,588
Total	20.7	3.2	4,969	105,353
SS_T	2,474.0			
SS_B	115.9			
SS_W	2,358.1			
η^2	.05			
F	5.8**			

TABLE 32

Filter Means Analysis - Fifth Grade Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Sex				
Females	21.6	2.7	1,729	37,953
Males	19.5	4.1	1,560	31,726
Total	20.6	3.6	3,289	69,679
SS_T	2,069.5			
SS_B	178.5			
SS_W	1,891.0			
η^2	.09			
F	14.9**			

TABLE 33

Filter Means Analysis - Oak Park Sample Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Sex				
Females	20.5	3.0	2,462	51,610
Males	19.5	4.0	2,335	47,295
Total	20.0	3.6	4,797	98,905
SS_T	3,025.0			
SS_B	67.2			
SS_W	2,957.8			
η^2	.02			
F	5.4*			

TABLE 34

Filter Means Analysis - Ninth Grade Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
City				
Oak Park	18.9	3.2	1,511	29,373
Detroit	20.6	3.0	1,647	34,613
Total	19.7	3.2	3,158	63,986
SS_T	1,655.0			
SS_B	155.6			
SS_W	1,539.4			
η^2	.07			
F	11.9**			

TABLE 35

Multiple Regression Analysis

All Predictors

$$F = \frac{196.0/4}{5678.9/475} = \frac{44.0}{12.0} = 3.7^{***}$$

Multiple $R^2 = 0.03$

Single Predictors

	Grade			Sex		City	
	5	7	9	F	M	OP	Det.
Mean	20.6	20.4	19.7	20.7	19.8	20.0	20.5
ETA^2		0.01		0.02		0.005	
F		2.5		8.6**		2.5	

Filtered Predictors

1. Grade

	Oak Park		Females	
	Mean	SD	Mean	SD
5th Grade	20.4	3.6	21.6	2.7
7th Grade	20.7	3.6	20.6	3.5
9th Grade	18.9	3.2	20.0	3.2
SS$_t$	3025.0		2474.0	
SS$_B$	147.2		115.9	
SS$_W$	2877.7		2358.1	
ETA^2	0.05		0.05	
F	6.1**		5.8**	

2. Sex

	5th Grade		Oak Park	
	Mean	SD	Mean	SD
Female	21.6	2.7	20.5	3.0
Male	19.5	4.1	19.5	4.0
Total	20.6	3.6	20.0	3.6
SS$_t$	2069.5		3025.0	
SS$_B$	178.5		67.2	
SS$_W$	1891.0		2957.8	
ETA^2	0.09		0.02	
F	14.9**		.5**	

TABLE 35 (Continued)

3. City

	9th Grade Mean	9th Grade SD
Oak Park	18.9	3.2
Detroit	20.6	3.0
Total	19.7	3.2
SS_t	1655.0	
SS_B	115.6	
SS_W	1539.4	
ETA^2	0.07	
F	11.9**	

CHILDREN'S AFFECT FOR THE SOCIAL ASPECTS OF SCHOOL

TABLE 36

2x2x3 Analysis of Variance

Source of Variation	SS	df	MS	F	ω^2
Grade	217.2	2	108.6	10.7**	.04
Sex	14.4	1	14.4	1.4	
City	0.1	1	0.1	0.0	
Grade x Sex	3.0	2	1.5	0.2	
Grade x City	9.9	2	5.0	0.5	
Sex x City	22.1	1	22.1	2.2	
Gr. x Sex x City	8.9	2	4.5	0.4	
Within Cells	4,741.3	468	10.1		
Total	5,016.8	479			

TABLE 37

Filter Means Analysis - Oak Park Sample Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Grade				
5	21.6	2.6	1,731	37,985
7	21.6	2.2	1,731	37,835
9	20.0	2.8	1,598	32,552
Total	21.1	2.7	5,060	108,372
SS_T	1,690.3			
SS_B	147.4			
SS_W	1,542.9			
η^2	.09			
F	11.3**			

TABLE 38

Filter Means Analysis - Females Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Grade				
5	21.6	3.0	1,731	38,181
7	21.9	2.6	1,755	39,023
9	20.2	3.8	1,618	33,842
Total	21.3	3.2	5,104	111,046
SS_T	2,500.0			
SS_B	133.8			
SS_W	2,367.1			
η^2	.05			
F	6.7**			

TABLE 39

Filter Means Analysis - Males Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Grade				
5	21.3	3.5	1,703	37,231
7	21.4	2.4	1,712	37,080
9	20.1	3.5	1,606	33,234
Total	20.9	3.2	5,021	107,545
SS_T	2,501.5			
SS_B	86.4			
SS_W	2,415.1			
η^2	.04			
F	4.2*			

TABLE 40

Multiple Regression Analysis

All Predictors

$$F = \frac{231.6/4}{4785.2/475} \qquad \frac{57.9}{10.1} \qquad = 5.0^{**}$$

Multiple $R^2 = 0.033$

Single Predictors

	Grade			Sex		City	
	5	7	9	F	M	OP	D
Mean	21.5	21.7	20.2	21.3	20.9	21.1	21.1
ETA^2	0.04			0.003		0.0001	
F	10.7**			1.4		0.05	

Filtered Predictors

1. Grade

	Oak Park		Female		Male	
	Mean	SD	Mean	SD	Mean	SD
5th Grade	21.6	2.6	21.6	3.0	21.3	3.5
7th Grade	21.6	2.2	21.9	2.6	21.4	2.4
9th Grade	20.0	2.8	20.2	3.8	20.1	3.5
Total	21.7	2.7	21.3	3.2	20.9	3.2
SS_t	1690.3		2500.9		2501.5	
SS_B	147.4		133.8		86.4	
SS_W	1542.9		2367.1		2415.1	
ETA^2	0.09		0.05		0.04	
F	11.3**		6.7**		4.3*	

CHILDREN'S VALUE OF THE SOCIAL ASPECTS OF SCHOOL

TABLE 41

2x2x3 Analysis of Variance

Source of Variation	SS	df	MS	F	ω^2
Grade	105.9	2	53.0	2.8	
Sex	46.9	1	46.9	2.5	
City	180.1	1	180.1	9.6**	.02
Grade x Sex	8.4	2	4.2	0.2	
Grade x City	135.4	2	67.7	3.6*	.01
Sex x City	28.0	1	28.0	1.5	
Gr. x Sex x City	0.7	2	.4	0.0	
Within Cells	8,737.0	468	18.7		
Total	9,242.4	479			

TABLE 42

Filter Means Analysis - Oak Park Sample Only

Predictor Variable	$\bar{x}$	σ	Σx	Σx^2
Grade				
5	18.6	4.4	1,487	29,139
7	16.8	3.9	1,347	23,901
9	16.4	4.1	1,313	22,861
Total	17.3	4.2	4,147	75,901
SS_T	4,244.3			
SS_B	212.6			
SS_W	4,031.7			
η^2	.05			
F	6.3			

TABLE 43

Filter Means Analysis - Seventh Grade Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
City				
Oak Park	16.8	3.9	1,347	23,901
Detroit	19.0	4.2	1,519	30,227
Total	17.9	4.2	2,866	54,128
SS_T	2,790.8			
SS_B	184.9			
SS_W	2,605.9			
η^2	.07			
F	11.2**			

TABLE 44

Filter Means Analysis - Ninth Grade Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
City				
Oak Park	16.4	4.1	1,313	22,861
Detroit	18.2	4.4	1,456	28,046
Total	17.3	4.3	2,679	50,907
SS_T	2,986.0			
SS_B	127.8			
SS_W	2,858.2			
η^2	.04			
F	7.1**			

TABLE 45

Filter Means Analysis - Males Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
City				
Oak Park	17.4	4.2	2,082	38,192
Detroit	19.1	4.1	2,287	45,571
Total	18.2	4.2	4,369	83,763
SS_T	4,229.0			
SS_B	175.1			
SS_W	4,053.9			
η^2	.04			
F	10.3**			

TABLE 46

Multiple Regression Analysis

All Predictors

$$F = \frac{332.9/4}{8909.5/475} = \frac{83.2}{18.8} = 4.4^{***}$$

Multiple $R^2 = 0.03$

Single Predictors

	Grade			Sex		City	
	5	7	9	F	M	OP	Det
Mean	18.5	17.9	17.3	17.6	18.2	17.3	18.5
ETA^2		0.01		0.005		0.02	
F		2.8		2.5		9.5**	

Filtered Predictors

1. Grade

	Oak Park	
	Mean	SD
5th Grade	18.6	4.4
7th Grade	16.8	3.9
9th Grade	16.4	4.1
Total	17.3	4.2
SS_t	4244.3	
SS_B	212.6	
SS_W	4031.7	
ETA^2	0.05	
F	6.3**	

2. City

	7th Grade		9th Grade		Male	
	Mean	SD	Mean	SD	Mean	SD
Oak Park	16.8	3.9	16.4	4.1	17.3	4.2
Detroit	19.0	4.2	18.2	4.4	19.1	4.1
Total	17.9	4.2	17.3	4.3	18.2	4.2
SS_t	2790.8		2986.0		4229.0	
SS_B	184.9		127.8		175.1	
SS_W	2605.9		2858.2		4053.9	
ETA^2	0.07		0.04		0.04	
F	11.2**		7.1**		10.3**	

ATTITUDE-ANXIETY CORRELATIONS: BY CITY AND GRADE LEVEL

TABLE 47

Oak Park, Fifth Grade, N=80

	Affect Academic	Affect Social	TASC	Value Academic	Value Social
Affect Social	.13				
TASC	-.18	-.03			
Value Academic	.56**	-.02	-.43**		
Value Social	.00	.21	.07	-.23*	
Sex	-.09	-.02	.02	-.20	.03

TABLE 48

Oak Park, Seventh Grade, N=80

	Affect Academic	Affect Social	TASC	Value Academic	Value Social
Affect Social	.03				
TASC	-.10	-.09			
Value Academic	.52**	.19	-.01		
Value Social	-.17	.14	.05	-.12	
Sex	.08	.06	-.19	-.14	-.02

TABLE 49

Oak Park, Ninth Grade, N=80

	Affect Academic	Affect Social	TASC	Value Academic	Value Social
Affect Social	-.17				
TASC	-.10	-.02			
Value Academic	.58**	-.09	-.18		
Value Social	-.08	.42**	.02	-.12	
Sex	.09	.01	-.17	-.12	.03

TABLE 50

Detroit, Fifth Grade, N=80

	Affect Academic	Affect Social	TASC	Value Academic	Value Social
Affect Social	.12				
TASC	-.16	-.00			
Value Academic	.61**	.05	-.20		
Value Social	-.03	.33**	.01	.10	
Sex	-.28**	-.08	.02	-.39**	.14

TABLE 51

Detroit, Seventh Grade, N=80

	Affect Academic	Affect Social	TASC	Value Academic	Value Social
Affect Social	.16				
TASC	-.06	-.08			
Value Academic	.39**	.19	.02		
Value Social	.41**	.49**	-.14	.20	
Sex	.13	-.25*	-.15	.05	.08

TABLE 52

Detroit, Ninth Grade, N=80

	Affect Academic	Affect Social	TASC	Value Academic	Value Social
Affect Social	.44				
TASC	-.06	.17			
Value Academic	.62**	.36**	.11		
Value Social	.18	.48**	.15	.02	
Sex	.09	-.04	-.04	.00	.15

APPENDIX B

Detailed TASC Analyses Based On Extended O.P. Data

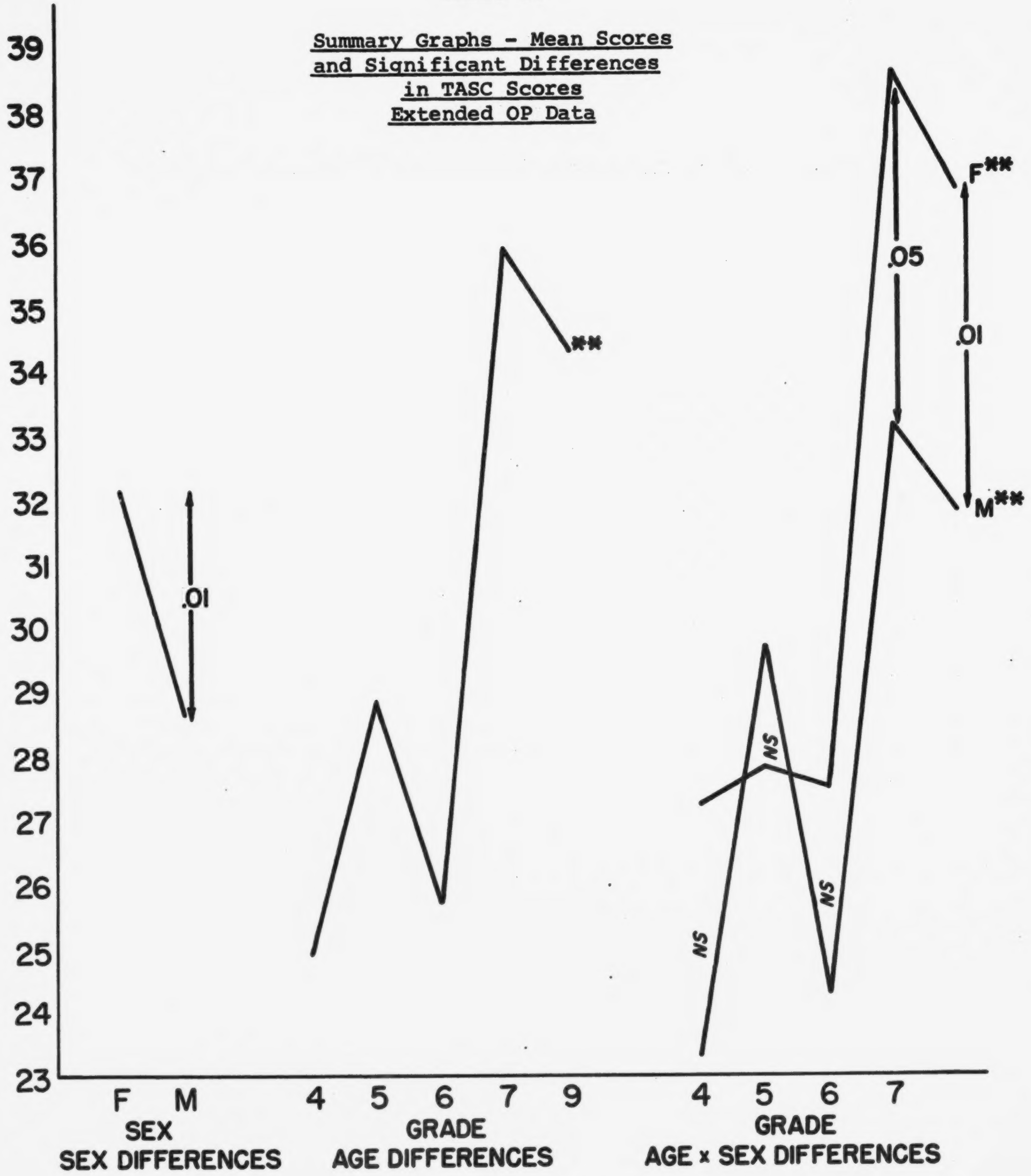
TABLE 53

Extended OP Sample Characteristics

	Grade					
	4	5	6	7	9	Total
Male	90	136	124	88	146	584
Female	66	127	89	93	144	516
Total	156	263	213	181	287	1100

TABLE 54

Summary Graphs - Mean Scores and Significant Differences in TASC Scores Extended OP Data



TASC TABLE 55

Filter Means Analysis - Extended OP Sample

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Grade				
4	24.9	16.6	3,892	139,748
5	28.8	16.1	7,574	286,288
6	25.7	15.9	5,464	193,472
7	35.9	17.4	6,499	287,727
9	34.3	14.7	9,832	398,522
Total	30.2	16.5	33,261	1,305,757
SS_T	300,035.1			
SS_B	19,840.6			
SS_W	280,194.5			
η^2	.07			
F	19.4**			

F level required for sig .01 = 3.32 4 df in num
.05 = 2.37

F level required for sig .01 = 6.63 1 df in num
.05 = 3.84

TASC TABLE 56

Filter Means Analysis - Extended OP Sample

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Sex				
Female	32.1	16.8	16,555	676,409
Male	28.6	16.1	16,706	629,348
Total	30.2	16.5	33,261	1,305,757
SS_T	300,035,1			
SS_B	3,312.2			
SS_W	296,722.8			
η^2	.01			
F	12.3**			

TASC TABLE 57

Filter Means Analysis - Extended OP Sample

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Grade				
4	27.2	18.6	1,793	71,241
5	27.8	15.1	3,529	126,805
6	27.5	16.2	2,451	90,617
7	38.6	18.3	3,589	169,415
9	36.8	13.9	5,193	218,331
Total	32.1	16.8	16,555	676,409
SS_T	145,269.4			
SS_B	12,892.5			
SS_W	132,376.9			
η^2	.09			
F	12.4**			

TASC TABLE 58

Filter Means Analysis - Extended OP Sample

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Grade				
4	23.3	14.8	2,099	68,507
5	29.7	17.0	4,045	159,483
6	24.3	15.5	3,013	102,855
7	33.1	15.9	2,910	118,312
9	31.8	15.0	4,639	180,191
Total	28.6	16.1	16,706	629,348
SS_T	151,453.4			
SS_B	8,206.7			
SS_W	143,246.8			
η^2	.06			
F	8.3**			

TASC TABLE 59

Filter Means Analysis - Extended OP Sample

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Sex				
Female	38.6	18.3	3,589	169,415
Male	33.1	15.9	2,910	118,312
Total	35.9	17.4	6,499	287,727
SS_T	54,373.4			
SS_B	1,379.3			
SS_W	52,994.1			
η^2	.03			
F	4.7*			

TASC TABLE 60

Filter Means Analysis - Oak Park Ninth Graders Only

Predictor Variable	$\bar{x}$	σ	$\sum x$	$\sum x^2$
Sex				
Female	36.8	13.9	5,193	218,331
Male	31.8	15.0	4,639	180,191
Total	34.3	14.7	9,832	398,522
SS_T	61,698.9			
SS_B	1,833.5			
SS_W	59,865.5			
η^2	.03			
F	8.7**			

APPENDIX C

Instrumentation

The instrumentation on which the present studies were carried out was part of a larger instrumentation package used in the "Classroom Behavior Project" cited earlier (Morse, Bloom & Dunn, 1961). Those sections are reproduced as appendix C.

HOW MUCH DO YOU LIKE

(Form A - Part VI)

Since all people are different, they like different things and they like them in different amounts. We would like to learn HOW MUCH YOU LIKE certain things about school. The way to mark this section is this: the more you like something, the more points you give it. The things you like very much, you mark 6. The things you like very little, you mark 1. Of course, you can mark any number from 6 to 1 depending on how much you like that particular item. Mark the number you choose by drawing a circle around it.

A. Learning about science and nature.

like a lot 6 5 4 3 2 1 like little

B. Playing games or sports at school.

like a lot 6 5 4 3 2 1 like little

C. Learning how to read and write well.

like little 1 2 3 4 5 6 like a lot

D. Going to school picnics, parties or dances.

like little 1 2 3 4 5 6 like a lot

E. Learning about people and places.

like little 1 2 3 4 5 6 like a lot

F. Learning about arithmetic or mathematics.

like a lot 6 5 4 3 2 1 like little

G. Being at a place where there are many others my own age.

like a lot 6 5 4 3 2 1 like little

H. Seeing friends at school.

like little 1 2 3 4 5 6 like a lot

HOW DO YOU FEEL ABOUT THINGS IN CLASS?

FORM B - PART V

I am going to be asking you some questions--questions different from the usual school questions, for these are about how you feel and so these questions have no right or wrong answers.

No one but myself will see your answers to these questions, not your teacher, principal, or your parents. Read each question with me as I read the question aloud. You can answer each question by circling just one of the letters right below the question.

These questions are about how you think and feel and therefore have no right or wrong answers. People think and feel differently. The person next to you might answer a question in one way. You might answer the same question in another way but both would be all right because you feel differently about the matter.

Remember, I shall read each question, including the kinds of answers you can give. Wait until I finish reading the question and then answer. Give only one answer for each question.

1. Do you worry when the teacher says that she is going to ask you questions to find out how much you know about the lesson?

   A. Worry a lot
   B. Worry some
   C. Worry a little
   D. Never worry

2. Do you worry about whether you will be promoted, that is, passing from this class to the next class at the end of the year?

   A. Worry a lot
   B. Worry some
   C. Worry a little
   D. Never worry

3. When the teacher asks you to recite in front of the class, are you afraid that you are going to make some bad mistakes

   A. Often
   B. Sometimes
   C. Once in a while
   D. Never

4. When the teacher says that she is going to call on pupils to do some problems, do you hope that she will call on someone else?

   A. Often
   B. Sometimes
   C. Once in a while
   D. Never

5. Do you dream at night that you are in school and cannot answer the teacher's question?

   A. Often
   B. Sometimes
   C. Once in a while
   D. Never

6. When you think you are going to be called on by the teacher, does your heart begin to beat faster?

   A. Often
   B. Sometimes
   C. Once in a while
   D. Never

7. When the teacher is explaining a hard subject, do you feel that others in the class understand it better than you do?

   A. Often
   B. Sometimes
   C. Once in a while
   D. Never

8. When you are in bed at night, do you worry about how well you are going to do in class the next day?

   A. A lot
   B. Some
   C. A little
   D. Never

9. When the teacher asks you to write on the blackboard in front of the class, does the hand you write with shake?

   A. Never
   B. A little
   C. Some
   D. A lot

10. Do you think that you worry more about school than other pupils?

    A. A lot more than others
    B. More than others
    C. A little more than others
    D. About the same as others

11. When you are at home and you are thinking about your school work for the next day, do you become afraid that you will get the answers wrong when the teacher calls on you?

    A. Often
    B. Sometimes
    C. Once in a while
    D. Never

12. If you are sick and miss school, are you afraid you will be way behind the other pupils when you return to school?

    A. Very much
    B. Some
    C. A little
    D. No

13. Do you dream at night that others in your class can do things you cannot do?

    A. Often
    B. Sometimes
    C. Once in a while
    D. Never

14. When you are home and thinking about your classwork for the next day, do you worry that you will do poorly on the classwork?

    A. Often
    B. Sometimes
    C. A little
    D. Never

15. When you think you are going to be called on by the teacher, do you get a funny feeling in your stomach?

    A. Often
    B. Sometimes
    C. Once in a while
    D. Never

16. If you did very poorly when the teacher called on you, did it bother you and make you feel unhappy?

    A. Very much
    B. Some
    C. A little
    D. Never

17. Do you dream at night that the teacher is angry because you do not know your lessons?

    A. Often
    B. Sometimes
    C. Once in a while
    D. Never

18. Are you afraid of school tests?

    A. A lot
    B. Some
    C. A little
    D. Never

19. Do you worry before you take a test?

    A. A lot
    B. Some
    C. A little
    D. Never

20. Do you worry while you are taking a test?

    A. A lot
    B. Some
    C. A little
    D. Never

21. After you have taken a test, do you worry about how well you did on the test?

    A. A lot
    B. Some
    C. A little
    D. Never

22. Do you dream at night that you did poorly on a test you had in school that day?

    A. Often
    B. Sometimes
    C. Once in a while
    D. Never

23. When you are taking a test does the hand you write with shake?

    A. A lot
    B. Some
    C. A little
    D. Never

24. When your teacher says that she is going to give the class a test, do you become afraid that you will do poorly?

    A. A lot
    B. Some
    C. A little
    D. Never

25. When you are taking a difficult test, do you forget some things you knew well before you started taking the test?

    A. Often
    B. Sometimes
    C. Once in a while
    D. Never

26. Do you ever wish that you didn't worry so much about tests?

    A. Often
    B. Sometimes
    C. Once in a while
    D. Never

27. When the teacher says she is going to give the class a test, do you get a nervous feeling?

    A. Often
    B. Sometimes
    C. Once in a while
    D. Never

28. While you are taking a test do you usually think you are doing poorly?

    A. Often
    B. Sometimes
    C. Once in a while
    D. Never

29. While you are on your way to school do you worry that you might have a test?

    A. Often
    B. Sometimes
    C. A little
    D. Never

HOW IMPORTANT

FORM B - PART VI

We all know people consider some things more important than others regardless of whether they like them or not. The importance of any thing is separate from how much we like it. Please mark HOW IMPORTANT YOU THINK it is for you to do each statement. Mark 6 if you think it is very important for you to do. Mark 1 if you think it is not so important for you to do. Of course you can mark any number from 6 to 1 depending on how much importance you give to that particular item. Mark the number you choose by drawing a circle around it.

A. Learning about science and nature.

Very important 6 5 4 3 2 1 Not so important

B. Playing games or sports at school.

Very important 6 5 4 3 2 1 Not so important

C. Learning how to read and write well.

Not so important 1 2 3 4 5 6 Very important

D. Going to school picnics, parties or dances.

Not so important 1 2 3 4 5 6 Very important

E. Learning about people and places.

Not so important 1 2 3 4 5 6 Very important

F. Learning about arithmetic or mathematics.

Very important 6 5 4 3 2 1 Not so important

G. Being at a place where there are many others my own age.

Very important 6 5 4 3 2 1 Not so important

H. Seeing friends at school.

Not so important 1 2 3 4 5 6 Very important